First Copy

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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Motor Vehicle Heads Oppose Advertising of Speed in Effort to Promote Safety

Eastern Conference Hears Speakers Tell of Increasing Problem Due to Makers Stressing How Fast Cars Can Go

NEW YORK, Oct. 23.—The Eastern Conference of Motor Vehicle Administrators opened a two-day meeting here yesterday at the headquarters of the National Bureau of Casualty and Surety Underwriters at 1 Park Avenue.

G. B. Sturgis of the service division of General Motors delivered an address outlining the work that the automotive industry is doing to promote safety. He referred also to the advertising efforts of the oil companies to this end. Mr. Sturgis assured the commissioners that the industry would give every possible aid in the effort to promote safety on the highways. He intimated that General Motors might inaugurate a safety campaign, comparable in nationwide effort to that of the oil companies.

John G. Griffin, motor vehicle commissioner of New Hampshire, strongly urged the elimination of all advertising emphasizing speed. Mr. Griffin laid a great part of the accident problem at the door of advertising that stresses speed. "If we can reduce this iniquitous form of advertising," he said, "we can reduce accidents."

Morgan T. Ryan, registrar of

(Continued on Page 6)

CITROEN IN DETROIT; PLANS TO RETURN TO FRANCE MONDAY

Detroit, Oct. 23.—Andre Citroen, the Henry Ford of France, came to town today on the same train that brought here Alfred Reeves, general manager of the National Automobile Chamber of Commerce, who is to attend the monthly meeting of the sales managers of the N. A. C. C. today.

The visit to this country of M.

(Continued on Page 2)

JONES DABNEY OFFER NEW PROCESS FOR FINISHING BODIES

Louisville, Ky., Oct. 23.—The Jones Dabney Company, Louisville, manufacturers of lacquers, varnishes, enamels, etc., has just announced an entirely new system of automobile finishing.

This company, with plants in Louisville and Detroit, has developed what it terms the syntex system, which, they claim, differs widely from the present type of nitro cellulose lacquers for finishing automobiles. This new process the makers claim offers not only greater durability and elimination of the most expensive operations in finishing costs, polishing, but produces a higher or more brilliant luster than has been obtainable in the past.

Syntex, according to Jones Dabney, falls into production schedules of the motor car manufacturers, as in this process several coats are sprayed on and sanded down, and the Syntex high luster surface is the result of a final baking operation. Syntex contains no low viscosity gun cotton, or nitro cellulose, the makers state.

A patent has been issued covering the use of low viscosity cotton in the manufacture of paints and lacquers, according to Jones Dabney, and the validity of this patent is now in litigation. Syntex does not infrinze on the patent in question, regardless of the outcome of the

(Continued on Page 2)

Contract Is But Minor Phase In Dealer-Factory Relations

Manufacturers and Dealers Must Work on Basis of Mutual Fairness, Says Harper of Willys

NEW YORK, Oct. 23.—H. B. Harper, vice-president in charge of sales for the Willys-Overland Company, Toledo, O., today in a letter to Automotive Daily News commenting on the proposal of C. A. Vane, general manager of the National Automobile Dealers' Association, for changes in factory-dealer contracts which would modify the cancellation clauses, points out that fair play on the part of both factory and dealer is the basis of successful factory-dealer relations and where fair play exists contracts become merely a formality.

Mr. Harper points out that many dealers have been successfully operating for Willys-Overland for the past twenty-seven years. "And it is noteworthy," he says, "that those dealers have enjoyed contractual relations with us for the longer periods are getting the greater percentage of business from their territories."

He further points out that in any case where the dealer or the manufacturer fails to properly appreciate the requirements of an equitable set-up, no contract can be devised that will protect one party against the other.

Mr. Harpers' statement in full is as follows:

"There isn't any question but what some dealers have suffered because of contract inequalities, but the dealer holding a franchise under a manufacturer that realizes that the dealer must make a reasonable profit is not having any contract difficulties. The manufacturer who doesn't realize this need and fails to handle the dealer accordingly doesn't deserve to have a dealer organization.

"Mr. Vane's plan has merit; that is, certain features of it have, but it is a question whether it is possible, or desirable, to make anything that even approaches an ironbound, unbreakable contract. Even Mr. Vane's proposal has a cancellation clause. There are more contracts unfairly broken by dealers than there are by factories, and a stiffer contract would be expected to protect the manufacturer as well as the dealer. If a dealer plays fair he should have no cause to worry, and I would be willing to do business with that kind of a dealer

(Continued on Page 2)

WINS PROMOTION

W. M. PURVES whose promotion to the post of assistant general sales manager is announced by the Dodge Brothers Corporation

DODGE PROMOTES PURVES TO ASSISTANT GEN. SALES CHIEF

Detroit, Oct. 23.—W. M. Purves, for the last five years passenger car sales manager for Dodge Brothers Corporation, today was appointed assistant general sales manager.

In his new capacity and by virtue of his years of experience in the industry and the Dodge organization, Mr. Purves' executive duties have been extended to include active participation in all phases of Dodge Brothers sales activities—passenger cars, trucks, school buses, taxicabs, parts and service, advertising and promotional endeavor.

Mr. Purves has been a member of the automobile fraternity ever since he left Princeton University in 1907,

(Continued on Page 2)

REEVES CALLS PLAN TO TAX CAR SALES UNFAIR TO INDUSTRY

Detroit, Oct. 23.—Answering the Washington story to the effect that the Hoover administration is considering a "selective" sales tax program and that an automobile tax is logical in view of the large sums the government is spending on highway upkeep, Alfred Reeves, general manager of the National Automobile Chamber of Commerce, in the city for an N. A. C. C. meeting, says:

"The motor industry pays taxes the same as other industries, but feels that this industry is legitimate enough not to be singled out to pay special taxes. The strongest opposition will be made by the automobile industry to such a plan. We would regard it as a stigma tax, and we certainly don't want to be placed in that category."

BUSINESS PIONEERS REPORT IMPROVEMENT IN GENERAL TRADE

Detroit, Oct. 23.—Business is improving, according to the general opinion expressed in replies received Thursday from fifty manufacturers, wholesale and retail dealers, and utility firms, to questionnaires broadcast by the Detroit business pioneers.

Eleven questions were asked in form and a request was made for remarks on the economic situation.

Manufacturers reported increased activity in tool and die production,

(Continued on Page 2)

INDUSTRY ASKING CANADA TO CLARIFY DRAWBACK RULING

Ottawa, Oct. 23.—The necessity for clarification of drawback item 1,055 in the customs tariff brought to Ottawa today a large delegation from the Automobile Chamber of Commerce of Canada, which, headed by J. C. Armer, chairman of the Automobile Parts Manufacturers of the Canadian Manufacturers' Association, asked the Hon. E. B. Ryckman, minister of national revenue, that regulations be published governing the item.

The section became operative on October 1, and provides, among

(Continued on Page 2)

Late News Flashes

Detroit, Oct. 23.—Steven J. Menzel has joined the engineering department of the Graham-Paige organization as stamping engineer. Mr. Menzel for a year and a half has been sales manager of the stamping division of the Briggs Manufacturing Company, and previously was sales manager of the Mullins Manufacturing Company of Salem, O., with which he was connected for eight years.

* * *

New York, Oct. 23.—The American Iron and Steel Institute is holding its regular fall meeting at the Hotel Commodore in this city today.

* * *

Austin, Tex., Oct. 23.—Gov. Ross Sterling has vetoed the bill passed by the recent session of the Legislature which would have set aside 1 cent of the 4 cents a gallon motor fuel tax to create a fund for payment of outstanding county and road district bonds.

* * *

Detroit, Oct. 23.—The Graham-Paige Motor Corporation reports retail deliveries so far this month as exceeding the figures for October last year, maintaining the level set by shipments during September, which was the first month in 1931 to exceed the corresponding month in 1930 in the number of cars leaving the factory.

Whole Train Used to Ship 100 Taxies From G. M. Plant

Pontiac, Mich., Oct. 23.—Making an entire train load, fifty cars, more than half a mile long, the first 100 taxicabs of a 150-cab order for general cabs, has just been shipped from the plant of the General Motors Truck Company in this city to the Palace Holding Company, which operates the Palace Cabs in New York city.

The new cabs are the Model O-12, just brought out by the General Motors Truck Company, and are finished in three tones of green, with the emblem of the Palace Cabs, a coach and four, on the door. The emblem of the company also is carried out in an illuminated sign over the windshield, and the name is found in sidelights over each door.

Litophone signals on the front fenders and on the rear, signal by means of a green lighted arrow which way the driver is about to turn, warning traffic in each direction. This device is controlled by a lever directly beneath the steering wheel and may be operated by the driver without removing the hands from the wheel.

Both the radiator front and the headlights are screened and the appearance of the cab is further enhanced by a radiator ornament representing a mounted knight. The interior of the cab is finished in green leather to match the three tones of green used on the outside.

Contract Is But Minor Phase In Dealer-Factory Relations

(Continued From Page 1)

even without a contract. If a manufacturer appreciates the value of a good dealer then again a contract becomes a mere formality. In other words, if either the dealer or the manufacturer fails to properly appreciate the requirements of an equitable setup then a contract will not protect the one against the other.

"We have dealers that have done business with the Willys-Overland Company for as long as twenty-seven years, and it is rather noteworthy that those dealers that have enjoyed contractual relations with us for the longer periods are getting the greater percentage of business from their territories.

"We do realize that in times of depression it is necessary to give special consideration to the dealer organization, and that realization we are endeavoring to reflect in our new agreements."

INDUSTRY ASKING CANADA TO CLARIFY DRAWBACK RULING

(Continued from Page 1)

other things, for drawbacks of 60 per cent. and 25 per cent. on materials and parts going into the manufacture of higher priced cars, when the production cost, less duty, includes 50 per cent. Canadian content. The item makes a large number of exemptions from the drawback privileges, all of which meet with the approval of the manufacturers, but is complicated in the enumeration of certain unexempt materials into the manufacture of which the exempted parts enter.

The automobile men feel that since cost sheets are now being compiled for the year, some confusion surrounding the operation of the item should be dispelled.

CITROEN IN DETROIT; PLANS TO RETURN TO FRANCE MONDAY

(Continued From Page 1)

Laval, the French premier, has upset the Citroen schedule. Having to confer with his countryman yesterday caused Citroen to first postpone his Detroit visit, then at the last minute he found he could make it.

His first message about a postponement caused the Detroit schedule of entertainments to be cancelled, so when he got here this morning everything had to be informal. He was met at the train by K. T. Keller, president of Dodge Brothers, who whisked him away to the surprise of every one.

M. Citroen announced that he is sailing for France Monday night on the Ile de France with M. Laval, the premier having requested the automobile manufacturer to return with him. This, of course, upsets M. Citroen's plan of spending next week in Detroit.

BUSINESS PIONEERS REPORT IMPROVEMENT

(Continued from Page 1)

which they took as an indication that the automotive industry will improve.

Retailers announced healthier conditions and attributed the revival to a public reaction against depression. Although sales were lower in September of this year than during the same period of 1930, they exceeded sales figures of last August, retail merchants said.

Some of the manufacturers were of the opinion that repeal of the prohibition laws would improve their business.

DODGE PROMOTES PURVES TO ASSISTANT GEN. SALES CHIEF

(Continued From Page 1)

his first position being that of mechanic in Orillia, Ontario, Canada.

Joining the Ford Motor Company in 1913 he served in various capacities until the United States' entry into the World War when he was given a leave of absence to become a member of the Federal government's executive committee of five men operating the gas defense plants in New York.

The rush and magnitude of this work is realized when it is noted that 17,000 men and women were employed to manufacture 45,000 gas masks daily and to fill 100,000 cannisters each day for shipment to France.

Rejoining the Ford organization at the close of the war, Mr. Purves served until the fall of 1919, when he left to become assistant general sales manager of the Wills Ste. Claire Company. From there he went to the Gray Motor Company as general sales manager.

Mr. Purves' first connection with Dodge Brothers was in 1924 when he joined the field organization as a district manager.

JONES DABNEY OFFER NEW PROCESS FOR FINISHING BODIES

(Continued from Page 1)

question of its validity, they claim, and therefore will not be subject to price control.

This product was invented more than six months ago, and first released about thirty days ago. Various manufacturers today have nearly 200 jobs out on test, in order to fully satisfy themselves that the product is all that is claimed for it, the makers state.

The company is now ready to make deliveries of this product, which is described as neither a lacquer nor a varnish, but a new product outright, that has been entirely developed within the company's own laboratories.

The manufacturers of automobiles have shown wide interest in this new product, as has the general motor industry, and the paint and lacquer producers, the makers claim.

G. M. NINE MONTHS EARNINGS REACH $97,455,390.00

New York, Oct. 23.—Alfred P. Sloan, Jr., president of General Motors Corporation, announced today the following:

"Net earnings of the General Motors Corporation for the nine months ended September 30, 1931, including equities in the undivided profits or losses of subsidiary and affiliated companies not consolidated, were $97,455,390. After deducting dividends of $7,031,691 on the preferred stock, there remains $90,423,699, or the equivalent of $2.08 per share, earned on the common stock outstanding.

"These earnings compare with operating earnings of $123,826,052 for the corresponding nine months of last year, which, after the deduction for preferred dividends, amounts to $116,631,317, or the equivalent of $2.68 per share, earned on the common stock outstanding. However, these figures for 1930 do not include a non-operating, non-recurring profit of $9,517,943 realized in the second quarter from the sale to General Motors Management Corporation of 1,375,000 shares of common stock of the General Motors Corporation. Including this non-operating, non-recurring profit, total earnings for the first nine months of 1930 were $131,403,125, or the equivalent of 52.85 per share, on the common stock outstanding.

"Net earnings for the three months ended September 30, 1931, were $13,333,214, or the equivalent, after the deduction of $2,344,152 for

(Continued on Page 6)

$6 Profit in 10 Minutes

for dealers who sell

Pines Winterfronts

1931 promises more sales than ever on this motor necessity.

HERE'S the profit opportunity you've been looking for. You actually earn $6 in 10 minutes by installing Pines Automatic Winterfronts! Your investment is small . . . prices are low . . . turnover is fast. And your profits are exceptionally worth while!

Motor car owners are more anxious than ever to make every dollar count. To Pines dealers that means one thing . . . more Winterfront sales. Because Pines Winterfront is a *necessity*, not a luxury. The public realizes that cold weather endangers the life of motors not equipped with this automatic protection . . . that Pines Winterfront provides motor insurance worth many times its cost.

New low prices on Pines Winterfront, too. $15 for small size; $20 for large size.

Don't miss this chance for extra fall and winter profits. Order your Winterfront stock right now. If you do not handle Pines Winterfront and want more information, get in touch with your nearest Pines distributor. Or write us for his name.

PINES WINTERFRONT COMPANY
3151 North Cicero Ave., Chicago

NEW PINES FUEMER

A New Profit-Maker for Dealers

Here's the new device—the Pines Universal Fuemer—the only device that instantly starts cold motors! It fits all model cars and motors and can be installed in a jiffy. Used as standard equipment by three fine car manufacturers. Not merely an accessory, but a NECESSITY. Ask your Pines distributor for full details.

SPARKS from DETROIT

New Miller Engines

* * *

Threaten Campbell Record

* * *

Exchanging Service Dope

* * *

American Chain to Broadcast

Chris Sinsabaugh—Detroit Editor

IN the pair of sixteen-cylinder engines Harry Miller has just delivered to Gar Wood lie possibilities of America regaining that much coveted straightaway automobile mile record of 245 miles per hour, held by Sir Malcolm Campbell and created on Daytona Beach last spring. All that is needed is some enthusiast who will fit the engine to an automobile chassis and make the effort.

At least that's the way Miller outlined it to me on his call to this columnar sanctum. The famous engine builder was accompanied by his sales manager, Preston Tucker, whose headquarters are in Detroit, and was saying good-by to this sector, where he has been since the Indianapolis Memorial Day 500-mile race, working on Gar Wood's job. Now he is en route back to Los Angeles to hatch out more ideas for the improvement of our particular breed of cats.

* * *

AND did I get an earful? All about the bundle of speed wrapped up in the marine power plants, and, more interesting still, about a front-drive V-type eight he has going through the works, which can be sold for less than $1,500. This last proposition, Miller says, is being seriously considered by several automobile manufacturers and may be seen on the market in 1932. Among its other features are independently sprung wheels and with the transmission in the rear axle. The engine develops 150 horse power, the wheel base is 127 inches.

* * *

THE Gar Wood engines, which our motorboat champion will use in his Florida campaign this winter, are sixteen-cylinder jobs, with 4 7-16-inch bore and 4½-inch stroke, each developing 1,800 horse power at 6,000 r. p. m. and weighing only 1,635 pounds apiece—less than 1 horsepower per pound. There are two carburetors and two magnetos to each, and, of course, they are supercharged.

* * *

"IT would be an easy job to put them in an automobile chassis and go after the straightaway record," said Miller. "They are the biggest engines I ever have built—larger even than the ones Campbell used last spring. I know they are faster, and I firmly believe that even with only one of them in a chassis it would be possible to beat 245 miles per hour. Whether or not there will be an attack on the Daytona mark in the spring I cannot say just now—I'm browsing around and thinking it over."

* * *

PAT O'DEA, general manager of the Graham-Paige Company of Michigan, the local factory retail organization, has one of the model service stations of the country at Endicott and Woodward, and he also has a smart service manager in Charles A. Fisher, who has devised something new that is worth passing along to others holding down similar jobs.

Starting in the summer, Fisher has recorded the names of visiting Graham owners passing through Detroit on their way to and from Michigan's various summer resorts and who have called on him for service. His card index shows the owner's name and address, the model of car driven and possible summer destination. All these cars are kept in a special file for future reference, and classified in such a manner that instant count can be made by cities or states. It also is used in assisting the Michigan Touring Information Bureau in its cannvass of possible visitors to the state, and all information of any value to the dealer who sold the car is also sent on. This information has been found of great value to Graham dealers in all parts of the country, enabling them to know just what work has been done on cars they have sold.

* * *

OUR old friend, J. O. Lashar, advertising manager of American Chain, has tapped the old typewriter to tell me they're going on the air again to caution car owners on the necessity of checking their cars periodically as a safety measure for winter driving. The campaign starts on Armistice Day, and each Wednesday night after that the program can be heard at 10.15, Eastern Standard time, over the Columbia system.

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

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ADVERTISING AND BUSINESS HEADQUARTERS

Harry A. Tarantous Business Manager. 350 Hudson St., New York, N. Y. George M. Slocum, Manager Detroit Bureau, 427 Fisher Building, Detroit, Mich., phone Trinity 2-3500; Willard R. Cotton, Western Manager, 333 North Michigan Ave., Chicago, Ill., phone Andover 2400; Metz B. Hayes, New England Manager, Little Building, Boston, Mass.; Blanchard, Nichols & Coleman, American National Bank Building, San Francisco, Cal.; Lincoln Building, Los Angeles, Cal.; 1037 Henry Building, Seattle, Wash. Address ALL advertising and business correspondence to 350 Hudson St., New York city

EDITORIAL DEPARTMENT

350 Hudson St. New York, N. Y. Telephone CA nal 6-1000
Alexander Johnston, Editor. William C. Callahan, News Editor.
Statistical Department (registrations and specifications), P. J. Robas, statistician; Engineering Department, A. Benson Carleton, technical editor; J. Russell Walsh, engineering editor. Merchandising Department, Charles S. Zach, editor. Art Department, John Bauerfeid director
Detroit Bureau, Chris Sinsabaugh, editor, 427-8 Fisher Building, Detroit, Mich. Telephone Trinity 2-3500. Contributing editor, John C. Wetmore.

The Safety Factor

AT the recent annual Safety Congress in Chicago, C. V. Bergquist, president of the National Safety Council, remarked that the human element is responsible for between 90 and 95 per cent. of all accidents involving motor vehicles. Sometime ago W. H. Cameron, managing director of the council, remarked that: "We have found that physical and mechanical causes at the outside account for a very small percentage of the accidents. We have found that the personal element was really the big factor. Nevertheless the car manufacturers keep plugging away for greater safety."

John A. C. Warner, general manager of the Society of Automotive Engineers, with this statement as a text, has recently pointed out specifically how the manufacturers have worked and what they have contributed to increasing the engineering and mechanical safety factors in our cars. It makes interesting reading.

One of the first factors Mr. Warner mentions is the enormous improvement in steering that has been made in the past few years. Any driver who remembers how he once had to fight his wheel to give reasonably accurate guidance to the vehicle, will realize how greatly this factor of safety has been increased.

Then there is the question of springing and of properly designed shock absorbers. The advances in this particular field in the past few years have been great and have contributed to making the vehicle more controllable, safer.

Again, not many years ago the driver of a car sat upon his gasoline tank. In case of accident this position was embarrassing, to say the least. Looking back on the number of fires after accidents, which a single memory holds, we certainly list the present location of fuel tanks as an added factor of safety.

How greatly four-wheel brakes have contributed to safety we need scarcely remind even the generation that is driving now. We may suggest a rather interesting lesson in just what four-wheel brakes mean to any driver who has not known the two-wheel types of yesterday. Get, if you can, a car with brakes only on the rear wheels and just try a few stops. But take our advice and do it cautiously, for you will be surprised at the distance required to bring a car to a halt with the old-fashioned braking equipment.

Undoubtedly balloon tires have also brought their contribution to safety. The broader space in contact with the road has made control of the vehicle more definite. The greater adhesion between tire and road does its part in bringing a car to a stable halt.

Better illumination for night driving has been gained as a result of endless experiment and work in the laboratory, though we for one would be far from saying that this angle of the safety problem has been entirely solved.

The engineers have, in recent years, given us a real contribution to safety in the lower hung designs that they have turned out. This factor increases the roadability of the vehicle and gives a more certain control.

But still the human factor remains. The manufacturers have spent and are spending millions of dollars to improve their vehicles to make them more safe, but in many cases the man at the wheel takes those very factors of safety and makes them excuses for the careless acts that cause accidents. The temperamentally careless driver, for instance, knowing that his four-wheel brakes will stop the car in a shorter distance than the old two-wheel affairs, uses that as an excuse for traveling always at a greater speed.

Our problem is the education of the careless 10 per cent. of our drivers to use the safety factors that the manufacturers are putting into their vehicles as the means for avoiding accidents, the purpose for which they have been evolved. But, in the meantime, the manufacturers keep plugging away for greater safety.

Trade Association News

Heussy Takes Charge of Seattle A. D. A. Activities

SEATTLE, Wash., Oct. 23.—Carl R. Heussy has started his duties as executive-secretary of the Seattle Automobile Dealers' Association. His appointment was announced in Automotive Danly News some days ago. His offices will be downtown, at 1377-80 Dexter Horton Building, instead of in Automobile Row, where offices have been maintained during the past three years.

The Automobile Row offices were opened under the direction of E. G. Hoffman, executive secreaary, and later were conducted under the regime of J. A. Snoddy, who served several months in that capacity.

The next big task to be undertaken by the dealers' association will be the 1932 show in Seattle. There will be no legislative sessions the coming year to struggle with, which decidedly lightens the burdens of the officials.

With the retirement of Floris Nagelvoort from the automobile business, coincident with the sale of the Nagelvoort-Stearn-Cadillac Company to Clark Brothers of Portland, William O. McKay, vice-president, is acting president of the Seattle Automobile Dealers' Association.

Philadelphia Trade Group Has a Busy Ten Days

THERE is no depression evident around the headquarters of the Philadelphia Automobile Trade Association, 715 North Broad St. Last week, on Tuesday, there was a meeting of the Automobile Jobbers' Credit Managers at noon. On Wednesday the local chapter of the Society of Automotive Engineers met here in the afternoon. On Thursday the Radio Distributors' Board of Trade held a meeting in the afternoon, and on Friday the Boosters' Club No. 18 got together for a session.

This week, on Monday, there was a special meeting of the board of directors of the Philadelphia Automobile Trade Association. On Tuesday the Chevrolet Dealers' Association met for luncheon and that same afternoon at 3 o'clock the Automotive Credit Managers' Association convened for a session. The tire division of the credit men's association met on Wednesday. Taking it all in all, a busy ten days or so at association headquarters.

On Monday, October 26, at 8 p. m., the Automotive Service Association gathers for a most important meeting. The insurance service plan is the subject up for discussion. This subject is of vital importance to every dealer, and a full meeting is earnestly hoped for. The discussion of the plan will be conducted by executives of the Bureau of Claims Association of Philadelphia, representing the National Bureau of Casualty and Insurance Underwriters. There will also be delegates from the Automobile Merchants' Association of New York.

COMING EVENTS

OCTOBER

15-24—London, England. International Motor Exhibition. Olympia Hall.
22-28—Prague, Czecho-Slovakia. International Automobile Exposition.
22-28—Prague, Czecho-Slovakia. International Automobile Exposition
27-29—Washington, D. C. Transportation meeting, Society of Automotive Engineers, Hotel Shoreham.
27-28—Chicago, Ill. American Railway Association Motor Transport Division meeting.
27-29—Baltimore, Md. Society of Automotive Engineers, Baltimore Section, meeting.
27-29—Washington, D. C. Meeting of Washington Section, S. A. E., in conjunction with National Transportation meeting.

NOVEMBER

5-14—London, England. International Commercial Motor Transport Exhibition. Olympia Hall.
10-12—Chicago, Ill. American Petroleum Institute, annual meeting, Hotel Stevens.
28-Dec. 9—Brussels, Belgium. Automobile Salon.
29-Dec. 5—New York, N. Y. Automobile Salon, Hotel Commodore.
30-Dec. 4—New York City. American Society of Mechanical Engineers, annual meeting.

DECEMBER

7-12—Atlantic City, N. J. Motor and Equipment Association and National Standard Parts Association, Joint Trade Show.
9-11—Atlantic City, N. J. American Institute of Chemical Engineers, meeting.

JANUARY

9-16—New York City, National Automobile Chamber of Commerce, National Automobile Show.
9-17—Los Angeles. Annual Automobile Show of the Los Angeles Motor Car Dealers Association.
10-13—Chicago. National Wheel and Rim Association, annual convention, Edgewater Beach Hotel.
11-14—Detroit, Mich. American Road Builders Association, twenty-ninth convention and show.
14—New York city. Society of Automotive Engineers, annual dinner, Pennsylvania Hotel.
16-23—Newark, N. J. Newark Automobile Dealers' Association's annual show.
16-23—Buffalo, N. Y. Annual automobile show of Buffalo Automotive Trade Association, Inc., 174th Regiment Armory.
17-23—Cincinnati. Automobile show of Cincinnati Automobile Dealers' Association.
17-23—Milwaukee. Annual Automobile Show, Milwaukee Automotive Trades, Inc.
22-30—New York. National Motor Boat Show, Grand Central Palace.
23-30—Minneapolis. Annual Automobile Show of Minneapolis Automobile Trade Association.
23-30—Pittsburgh. Annual automobile show of Pittsburgh Automobile Dealers' Association, Motor Square Garden.
25-29—Detroit, Mich. Society of Automotive Engineers, annual meeting, Bork Cadillac Hotel.
30-Feb. 6—Cleveland. Annual Automobile Show of the Cleveland Automobile Manufacturers and Dealers Association, Public Auditorium.
30-Feb. 6—Chicago, Ill. National Automobile Chamber of Commerce, National Automobile Show.
30-Feb. 6—Chicago, Ill. Automobile Salon, Hotel Drake.

FEBRUARY

6-13—St. Paul. Annual Automobile Show St. Paul Automobile Dealers, Inc.
13-20—Kansas City, Mo. Annual Automobile Show, Kansas City Motor Car Dealers' Association, American Royal Building.
13-20—Los Angeles, Cal. Automobile Salon Hotel Biltmore.
22-March 5—San Francisco, Cal. Automobile Salon, Palace Hotel.

NEW G. M. DISTRIBUTOR NAMED IN CAMDEN, N. J.

Camden, N. J., Oct. 23.—General Motors Truck Corporation has appointed Camden Motor Trucks Company, Cooper and Federal Streets, as the Camden and Burlington counties representative. The local firm will take care of sales and service on G. M. C. trucks, which include a wide variety of models, from three-fourths to fifteen-ton hauling capacity.

W. T. Wilkins and L. T. J. White are partners in the local concern. Wilkins for a number of years was connected with Henry G. M. C. Trucks, former G. M. C. truck dealer in this territory.

His associate, L. T. J. White, has enjoyed a long association with G. M. C. in the Philadelphia territory, more recently in the capacity of national account contact man.

CONTESTING GAS TAX INCREASE IN ALABAMA

Montgomery, Ala., Oct. 23 (UTPS).—A suit contesting the validity of the State of Alabama's one cent gas tax increase recently passed by the State Legislature for maintenance of highways and bridges has been filed in chancery court by the Woco Pep Company of Montgomery. The suit names S. R. Butler, head of the State Tax Commission, and A. B. Tucker, chief clerk of the gasoline tax department, as defendents. The tax became effective July 28, giving the state a total tax of 5 cents per gallon on gasoline

GOODWIN FEARS 'JOKER' IN NEW INSURANCE BILL

Boston, Mass., Oct. 23.—Frank A. Goodwin, former registrar of motor vehicles, says that there is a "joker" in Gov. Joseph B. Ely's bill amending the motor vehicle insurance law.

Goodwin says that the "joker" is in regard to two of the major charges asked by the governor, the deductible policy and the demerit rating plan.

Goodwin's objection to the deductible policy provision is that it is a "joker" and that there are reasonable grounds for considering it to be unconstitutional. In the first place, as Goodwin reads the proposed legislation, the insured is liable to pay not merely $100 of a claim, but any amount from $100 up to $200. He arrives at that conclusion from an analysis of the provision which appears to make it necessary for the insurance company to pay any claim up to $100, but in cases of claims of more than $100 does not make the insurance company liable at all except in excess of $200.

If Goodwin's analysis is correct, the deductible policy clause is a "joker," for in all claims more than $100 and under $200 the insured would pay the entire amount out of his pocket instead of the amount between $100 and $200 contained in the judgment.

The question of constitutionality comes in relation to the board of review on a claim. As Goodwin sees it, the insured would not be personally represented, as the review board would consist of a representative of the insurance company, a representative of the claimant and a representative of the insurance commissioner. Their decision would be final and the insured would have to pay under the deductible clause without right of appeal in Goodwin's opinion, and that would be confiscatory legislation.

The demerit rating plan is attacked by Goodwin as particularly bad. As he reads the bill he finds that under the demerit plan proposed, all moneys accruing from demerits go to the insurance companies. The state presumably recovers something by levying $2,000 on each of the companies. This, Goodwin feels, will hit the small mutual company which doesn't get many demerits, while the large companies, which, presumably, will collect large amounts from demerits, will benefit.

MATHEWS PROMOTES HOUGH AND RAMSAY

Ellwood City, Pa., Oct. 23.—J. H. Hough, who has been in charge of advertising and sales promotion activities for the Mathews Conveyor Company of Ellwood City, Pa., is now senior member of the company's Pittsburgh district office, operating in the northwestern Pennsylvania and eastern Ohio territory from the Ellwood City office.

W. J. Ramsay has taken over the advertising and sales promotion work of the company. It is also announced that the Philadelphia office of the Mathews organization has taken over the activities of the North and South Carolina territory. This was handled in the past by the Cothran-Bayles Company of Charlotte, N. C.

"NIXITE"

WE PERPETUATE FINISH

This is the Wonder Finish that you have been waiting for. Can be applied on all Metals, Woods, Glass, Gold, Silver and Autos, leaving a hard, dry, flint-like finish.

NO WAX OR OIL! NO STRONG ABRASIVES

such as Acids, Grit, etc. Instead, "NIXITE" has a mineral base, and this also acts as an abrasive strong enough to cleanse any article. But it builds up the paint instead of wearing it down. Time, Labor and Material saved. *Agents wanted.*

THE NIXITE LABORATORIES, INC.
3042 A. I. U. Building, Columbus, Ohio
ARTHUR A. NIXON, *Director of Sales*

MULLINS STAMPINGS
FOR THE AUTOMOBILE INDUSTRY

WRITE!
Mullins Mfg. Corp., Salem, Ohio
332 So. Michigan Ave., Chicago.
General Motors Building, Detroit.

HOFFMAN FAVORS NATIONAL CODE IN TRAFFIC CONTROL

Trenton, Oct. 23.—"It is the **of the state to see that the traffic regulations of its partially autonomous subdivisions—cities, towns and boroughs—are consistent and uniform, and it is then the state's responsibility to see that its own regulations conform, in so far as possible, to a nationally uniform standard," according to Harold G. Hoffman, motor vehicle commissioner.**

"The New Jersey traffic commission is in full co-operation with the Motor Vehicle Department. The combined activities of these two agencies will be reflected in a general improvement in New Jersey driving conditions.

"We must admit that, psychologically speaking, the automobile still is an innovation. We have not yet reached the stage in our use of it where our actions are instinctive. When, in driving our cars, we are confronted by any one of numerous conditions and decide to act in a certain way, it is the result of mental processes which, rapid though they are, nevertheless require more thought than if the decision were instinctive. Some day, no doubt, we shall all learn to act as quickly in stopping our cars at the sign of danger as we now do in closing our eyes when an insect approaches too closely.

"So, in final analysis, in making traffic regulations we are formulating standards of judgment which it can be hoped some day all will make instinctively when certain conditions arise.

"Regarded from this standpoint, uniformity in traffic regulations becomes a matter of tremendous significance.

"Heavy loads of traffic are carried on New Jersey highways by reason of the state's geographical location. The failure to regulate the installation and use of traffic signals and stop street signs in past years has brought about a chaotic condition that will take several years to straighten out."

ALUMINUM INDUSTRIES EXPANDING WAREHOUSE

Cincinnati, O., Oct. 23.—Steady demand for replacement parts in the automotive field has forced Aluminum Industries, Inc., to expand warehouse distribution facilities in the Southeast section, with Atlanta as headquarters. Heretofore the Atlanta branch has been the Southeastern distribution point for Permite aluminum pistons exclusively.

The company announces the opening of a new branch at 431 Peachtree St., Atlanta, from which the entire line of its products, manufactured in the factory at Cincinnati and the subsidiary plant at St. Cloud, Minn., will be marketed. The line includes Permite aluminum and semi-steel pistons, diachrome steel valves, spring tie rod and king bolts, piston rings, bronze and steel bushings, water-pump shafts, impellers and packing units and mufflers.

G. E. TOTTEN PROMOTED BY REPUBLIC STEEL CORP.

Youngstown, O., Oct. 23.—George E. Totten has been appointed manager of sales of the tin plate division of Republic Steel Corporation with headquarters in the general offices of the corporation here, according to an announcement by N J. Clarke, vice-president in charge of sales.

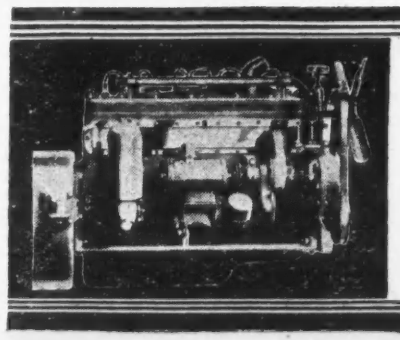
CUMULATIVE NEW PASSENGER CAR

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Some of this data has been published previously, but it is given here complete for the convenience of our subscribers. Readers desiring

In this table 34 states and the District of Columbia **Returns for today: Indiana, Kansas, Massachusetts,**

States	Auburn	Austin	Buick	Cadillac	Chevrolet	Chrysler	Cord	De Soto	De Vaux	Dodge	Durant	Essex	Ford	Franklin	Graham	Hudson	Hupmobile	La Salle
Alabama	1		17		389	6	1	5		1		3	281		2		2	1
Arkansas			7	3	169	8		1		22		3	185		10	2		
Conn.	39	1	134	16	549	71	2	57	11	53	6	50	447	8	50	22	22	11
Delaware	2		21	1	74	15		4		3	4	3	119		1	4	1	4
Florida	22		41	3	502	30	1	7	5	19	4	20	392	2	33	16	4	2
Georgia	16	1	55	4	577	21	1	13	7	40	1	16	602	2	22	14	14	4
Idaho	4	1	12		100	4	1	5	7	11	2	4	108		8	3	2	
Illinois	120	5	269	39	1741	247	13	165	27	209	9	124	1893	9	159	64	60	29
Indiana	68	1	146	16	1061	117	6	134	12	125	8	79	873	4	52	35	28	6
Kansas	12	5	38	2	520	16	3	15	2	34	5	27	364		10	15	4	2
Maryland	14		85	3	735	46		20		23	10	36	470	4	32	20	14	1
Mass.	74	10	317	44	1244	146	5	57	18	119	19	172	1400	28	68	69	57	37
Michigan	42	9	234	45	1409	161	5	99	50	228	25	164	1679	2	105	68	58	28
Minnesota	20		80	7	678	62	1	22	2	34	12	16	430		44	11	21	4
Missouri	47	1	104	11	1218	86	4	60	2	92	18	54	1031	2	45	23	31	9
Montana	2		9		80	14		5	1	5	5	5	82	4	2		4	1
Nebraska	10		40		474	19		11	4	28	1	8	362		26	3	5	1
N. Hamp.	9	1	34	3	207	17		7	5	13	3	13	184	4	11	9	6	2
N. Jersey	111	2	401	53	1445	265	4	54	21	125	65	105	1225	12	92	62	83	40
N. Mexico		1	5	2	73	3		2		4	2	1	60			1	1	
N. Ca'lina	14	6	47	4	696	59		21	5	57		22	703	1	10	18	4	6
No. Dakota	1		18		122	10		3	5	6	4	5	160		3	3	1	
Ohio	112	4	195	38	1623	222	6	141	27	143	31	124	1472	11	123	56	66	26
Oklahoma	12	1	41	3	476	19	1	6	2	41	1	5	359		1	4	5	3
Oregon	7		33	1	222	29		24	4	14	8	4	247		20	6	3	2
Penn.	157	12	490	62	2487	442	2	200	30	324	36	210	2074	27	185	81	119	53
Rh. Island	16	2	49	9	225	48		45	2	25	1	13	208	4	25	9	11	3
S. Carolina	5		14		341	15		10	2	12		15	358		2	3	1	
So. Dakota		3	17		159	17		17	3	25	2		140			2	4	1
Utah	6		25	1	148	8		6	3	10	3	9	141		14	14	6	1
Virginia	38	2	59	6	865	64		68	3	46	5	43	814		17	25	21	3
Wash.	15	1	70	8	281	37		50	11	30	18	10	332	2	17	10	7	3
West Va.	15		35		317	55	1	18	6	33	3	27	284		26	9	4	3
Wisconsin	30	4	124	5	890	82	1	51	20	78	7	69	656		52	29	26	4
Dist. of C.	20		62	7	442	25		27		48	4	35	617	1	53	5	14	3
Totals	1061	73	3328	396	22539	2486	58	1430	297	2080	322	1494	20752	127	1320	715	709	293
Ala., '30			52		463	19		3		7		2	748		7	2	7	
Ark., 1930	1		27	2	324	25		8		21	12	10	429		7	1	2	5
Conn., '30	23	7	271	35	459	96	3	73		83	13	89	854	17	38	44	41	35
Dela., '30		3	75	9	96	18		4			7	11	195	1	1	8	3	4
Fla., '30	6	30	110	7	642	53	2	11		19	9	46	847	4	38	22	8	3
Ga., '30	1	7	122	9	618	30	1	14		35	1	9	1087	3	13	8	11	7
Idaho, '30	1	4	44		209	14		12		19	16	10	295		8	6	1	1
Illinois, '30	43	35	783	107	2167	310	12	158		206	31	176	3688	60	132	110	78	110
Ind., '30	29	22	309	24	1036	98	3	69		68	9	86	1594	8	58	61	33	18
Kan., '30		28	146	1	725	27		9		35	9	43	1020		14	34	6	5
Md., '30	2	2	182	13	731	49	1	17		22	12	41	867	15	30	23	21	8
Mass., '30	24	26	571	75	1144	203	4	53		157	31	270	2530	30	54	130	61	93
Mich., '30	7	30	817	144	1507	142	3	44		103	43	195	3666	1	83	136	46	62
Minn., '30	5	8	216	6	1010	78		25		38	20	50	1350	1	42	36	24	16
Mo., '30	18	25	311	36	1248	79	2	37		82	30	103	1802	19	54	37	28	14
Mont., '30	3	1	41	3	136	17	1	7		9	5	19	159	4	4	8	4	2
Neb., '30	3	18	165	4	948	69		13		57	8	36	1316	2	12	6	10	3
N. H., 1930	4	5	91	4	178	27		16		18	9	21	321	4	9	7	10	1
N. J., '30	41	41	783	72	1394	222	4	57		104	31	169	2495	36	81	112	88	56
N. M., '30			29		154	8		3		4	3	5	159		5	1	1	
N. C., '30	2	4	120	10	667	72		12		38	7	28	1193	6	10	22	4	3
N. D., '30		4	64		354	16	1	7		11	14	23	438	1	10	7	2	1
Ohio, 1930	42	21	608	67	1827	227	7	117		136	66	220	3295	48	105	131	61	44
Okla., '30	3	23	193	18	991	33		10		80	12	20	1217	10	13	11	9	9
Ore., '30	2	13	110	1	267	23		18		16	38	22	503	4	22	18	7	
Penn., '30	39	64	1181	84	2548	558	7	218		306	118	326	4343	59	221	201	144	90
R. Isle., '30	6	1	93	15	172	51		31		24	12	24	313	5	16	13	13	10
S. C., '30	1	9	49	3	390	13		13		18	1	9	622		1	10	3	1
S. D., '30	1	3	50	1	418	24		3		39	17	19	487	3	9	5	10	
Utah, '30	9	2	58	6	209	8	3	13		19	19	23	320	4	19	6	4	3
Va., 1930	6	10	131	8	1119	78	3	30		57	17	40	1354	4	34	28	31	9
Wash., '30	8	17	250	8	434	71		48		37	62	37	1006	11	18	29	37	9
W. Va., '30	7	1	78	5	444	51		15		49	13	35	723	9	21	16	13	6
Wis., '30	14	10	362	15	1103	119	2	58		64	24	89	1504	9	46	72	22	13
D. of C., '30	5	6	109	22	283	28		10		16	10	23	680	3	24	13	19	11
Totals, '30	356	480	8601	814	26415	2956	59	1236	*	1987	729	2329	43420	381	1259	1374	862	652

*Not in production at that time.



Buda "Hivelo" Engines *and* Link-B

IN selecting the timing drive for the "Hivelo" series, The Buda Company, builders of quality engines since 1910, were governed by the fact that the timing drive must be in keeping with the rest of the engine . . . . fool-proof, reliable and long-lived: Link-Belt Automotive Silent Chain with Automatic Chain Adjust-

INDIANAPOLIS LINK-BELT

(Reg. U.S.

REGISTRATION STATISTICS, SEPTEMBER, 1931

Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies

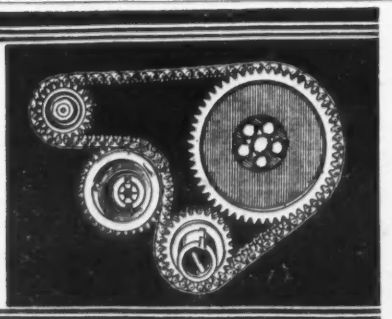
Michigan, New Jersey, New Mexico, Oklahoma, Oregon

States	Lincoln	Marmon	Nash	Oakland	Oldsmobile	Packard	Peerless	Pierce-Arrow	Plymouth	Pontiac	Reo	Studebaker	Stutz	Whippet	Willys	Willys-Knight	Miscellaneous	Totals
Alabama			7		1	5			16	9		17			16	1		781
Arkansas			4	1	5	2		1	56	6		2			3			490
Conn.	3	6	61	21	52	39		6	275	123	18	67			25	6	1	2,252
Delaware			6	1	9	7			28	17		8			9	3		344
Florida	3	1	24	5	15	9		1	202	57	4	14			13	4		1,455
Georgia	3	1	40	3	18	8		2	132	39	3	43			13	2	1	1,718
Idaho			12		2				44	5	1	5		1	8	2		352
Illinois	13	15	205	41	207	110	6	13	1138	283	27	181	4		126	29	17	7,597
Indiana	7	26	58	29	106	25		3	650	168	7	119	4	3	92	12	1	4,081
Kansas		2	27	8	25	2	1	2	130	66	10	19		2	31	4		1,403
Maryland	1	1	46	14	28	20	2	1	232	96	11	45			23	3	1	2,037
Mass.	11	26	176	35	132	113	10	27	665	267	26	182	1		61	42	3	5,661
Michigan	11	7	78	32	182	78	2	3	1175	212	41	75		2	69	13	2	6,393
Minnesota			25	8	45	22		1	391	73	3	38	1	1	40	12	1	2,105
Missouri	9	22	77	14	54	36	2	5	474	128	12	41	2	3	62	18	19	3,816
Montana			6	3	4	2			43	26	2	5		1	5	1		317
Nebraska		3	13	4	18	5			156	50	3	32		2	35	9		1,322
N. Hamp.	1	2	23	6	31	13		3	116	35	4	21			17	7		807
N. Jersey	13	89	222	47	175	170	3	31	737	221	25	185	5	3	89	53	3	6,236
N. Mexico			3						28	8		1		1	1			197
N. Ca'lina	4	1	6	2	23	12		2	253	72		23			21	1		2,093
No. Dakota	1	2	3	1	8	1			53	12		8		2	14		2	448
Ohio	8	25	134	38	132	85	8	6	1343	254	13	151	4	11	143	42	9	6,826
Oklahoma	1		5		17	4		1	108	44	2	14			8	1		1,185
Oregon	1		24	8	18	2			81	22	8	23			11	3		825
Penn.	21	67	278	87	228	170		13	1787	403	32	195	1	2	250	62	7	10,594
Rh. Island	2	1	23	6	14	11	2	7	131	58	8	27			6	5		996
S. Carolina			1	6	7	4			71	16	1	8			1			893
So. Dakota			4	1	23	2			62	18		12		1	9	3		525
Utah		2	15	3	7	4			22	12	1	16		1	7	2		487
Virginia	1	5	32	17	24	20		6	273	109	3	34		2	45	12		2,662
Wash.	2		40	18	38	5		2	210	44	6	66			26	6		1,365
West Va.	2	3	24	13	19	13			177	54	5	23			44	2		1,215
Wisconsin	5	5	110	25	73	22		3	433	148	13	72		1	77	13	2	3,130
Dist. of C.	4	5	31	10	33	24		2	189	86	1	30			13	4	7	1,802
Totals	127	317	1843	507	1773	1045	36	141	11881	3241	290	1802	22	39	1413	377	76	84,410
Ala., '30	2				1	6		1	24	5	2	12			2	1		1,366
Ark., 1930	1	1	16	3	6	1			38	13	3	8		4	2	1		971
Conn., '30	4	21	72	58	43	75	1	15	69	109	19	100	2	10	27	12	9	2,827
Dela., '30	3	2	4	8	3	9			14	15		7		3	5	1	1	510
Fla., '30	6	13	24	21	18	15		2	63	56	6	11		13	6	2		2,113
Ga., '30	8	6	21	8	9	10		2	68	34	7	45		9	11	3		2,217
Idaho, '30	2	1	17	4	5				27	7	4	12		7	2	3		731
Illinois,'30	30	60	228	85	204	201	8	42	331	356	46	401	12	40	114	60	22	10,446
Ind., '30	5	82	66	36	105	30	3	4	193	165	14	166	1	29	90	10	3	4,527
Kan., '30		14	42	17	19	6	1		93	101	9	28	3	21	33	4		2,493
Md., '30	4	7	53	13	30	19	2	7	81	99	21	52		11	17	7	5	2,464
Mass., '30	26	70	282	65	103	178	16	59	184	240	53	212	1	29	61	49	14	7,098
Mich., '30	23	41	89	99	188	121	4	10	308	227	82	162		65	95	20	2	8,565
Minn., '30	5	11	54	25	35	28	4	3	213	127	11	94		42	58	15		3,650
Mo., '30	4	16	110	46	89	39	1	17	166	133	20	91	1	39	58	15	21	4,791
Mont., '30		2	10	6	3	1		1	18	12	2	12		3	7	4		504
Neb., '30	6	3	33	13	35	11		1	162	74	3	82		29	62	9	4	3,197
N. H., 1930	2	14	41	8	23	15	1	2	41	29	9	30		4	15	5		964
N. J., '30	17	41	212	109	175	172	12	55	167	198	44	267	4	30	77	61	12	7,439
N. M., '30	1	2	3	3	2	1			2	6		4		2	7	1		406
N. C., '30	2		25	4	15	6		4	72	52	3	18		13	9	5		2,416
N. D., '30		7	25	8	10	1			45	43	4	24		27	35	4		1,186
Ohio, 1930	14	87	242	135	186	138	23	25	400	338	48	256	4	114	240	59	18	9,349
Okla., '30	3	4	44	22	24	11		8	82	74	1	34		32	23	4	3	3,021
Ore., '30		5	17	7	18	11		3	41	29	11	42		6	4	12		1,270
Penn., '30	22	93	376	179	247	256	20	46	766	412	79	391	2	83	281	98	24	13,832
R. Isle., '30	3	5	22	6	21	13	3	13	35	36	16	29		6	12	19	1	1,039
S. C., '30	2		10	9	5	5			29	17	5	11		1				1,237
S. D., '30	2	6	17	9	52	4			61	31	4	28		11	19	3		1,336
Utah, '30	1	1	27	7	8	7		1	13	26	7	22		5	5			855
Va., 1930	3	10	32	35	25	10	6	4	102	123	8	41		9	36	16		3,419
Wash., '30	2	8	34	15	45	33	3	3	115	76	20	90		19	42	21	2	2,610
W. Va.,'30	4	12	28	23	26	13		1	95	90	23	30	1	25	53	12		1,922
Wis., '30	4	22	184	68	93	26	2	12	217	225	21	184		47	109	15	2	4,757
D. of C., '30	5	12	16	24	34	32	16	6	49	57	6	47		7	10	7	6	1,596
Totals, '30	216	679	2476	1178	1905	1504	126	347	4384	3635	611	3043	31	795	1627	558	149	117,174

ink-Belt Automotive Silent Chain

The ment was therefore selected as the most suitable drive for the
vere purpose. Whether the most convenient and efficient layout calls
with for 2, 3, or more wheels, or for manual or automatic adjustment
ved: of chain tension, Link-Belt can furnish the type that suits the re-
just- quirements best. Our experienced Engineers are at your service.

T COMPANY DETROIT 4828



SILENT Trademark)

E. A. LABORATORIES HEAD REPORTS SALES PICKING UP IN WEST

Brooklyn, N. Y., Oct. 23.—John M. Aufiero, president of E. A. Laboratories, Inc. ,of Brooklyn, has returned to the East after a two months' trip embracing every large jobbing center between Chicago and San Francisco.

"You have to get out of the East to appreciate that business already has turned the corner," says he. "There is a better tone to business viewpoint among wholesalers than I have seen in a year and a half. There are some sections in which accessory and parts jobbers are not doing so well. Usually this is localized to those communities where the wholesalers, by a sort of tacit agreement among themselves, have decided to wait for something to happen. These communities, however, are few. In most centers I visited novelty products an accessories, especially those with eye-appeal, are doing well.

"This is particularly true where jobbers decided to meet competition of chain stores and mail order operators by creating a little department of their own, and this is certainly a healthy sign. It proves that the jobber finds a way to meet all competition successfully."

Aufiero also reports that sales of E. A. Laboratories for September, 1931, are equal to those of the same month in 1929, which was one of the biggest, in terms of volume, since 1908, the year of the company's inception.

PLAN TO CUT CREDIT DIFFICULTIES IN MASS.

Springfield, Mass., Oct. 23.—A humane effort to alleviate credit difficulties existing between merchants, buyers and employers, which has been quietly and efficiently operating for several months to the benefit of all concerned, was revealed when the Chamber of Commerce publicly announced its co-operation in the project by publishing a letter to merchants, manufacturers and other large employers, urging increased co-operation in the project.

The purpose of the undertaking is to relieve unnecessary and unjust harassing of employees unable to meet obligations immediately, but still secure settlement of all bills in a satisfactory manner. The plan was fostered by the Retail Credit Association, is operated through the facilities available at the Credit Bureau, Inc., and has the approval of the Chamber of Commerce and influential public leaders.

EAST COAST STAGES ADDS FOUR NEW WHITE COACHES

Richmond, Va., Oct. 23 (UTFS).—E. S. Dodd, general passenger agent of the East Coast Stages, announces that four White motor coaches of the latest design will be placed in operation by November 1. These coaches will be equipped with all modern improvements, including electric fans, cold water thermos tanks and reclining chairs. The windows will be equipped with leather drawn curtains instead of the push aside type and will be operated by turnstead window lifts. Each bus will have a capacity of forty passengers with room for seven aisle chairs.

HOUSTON ELECTRIC ORDERS GENERAL MOTORS COACHES

Pontiac, Oct. 23.—Five forty-passenger gas-mechanical coaches of the type recently announced by General Motors Truck Company, have been ordered by the Houston Electric Company of Houston, Tex., the coach division reported today. The total order was for ten coaches, of which Twin Coach Company supplied five. The Houston Transportation operates seventy-six coaches in Houston.

OAKLAND DEALER MOVES

Hickory, N. C., Oct. 23.—The J. T. Setzer Motor Company, Oakland and Pontiac dealer, formerly located at 1327 11th Avenue, has just completed moving its plant to its new location at 11th Avenue and 12th Street, in the building formerly occupied by the Hickory Buick Company.

S. A. E. FINDS PASSENGER CARS SUITABLE FOR FLEET USES

By J. RUSSELL WALSH

THE passenger car as an adjunct to commerce had its inning last night at the October meeting of the Metropolitan Section of the Society of Automotive Engineers, which was held following the monthly dinner, at the A. W. A. clubhouse, New York city.

"The Salesman's Car—Is It Cheaper to Rent or Buy?" was presented by Richard A. Wotowitch, marketing and refining division member of the manufacturing committee of Henry L. Doherty & Co. A composite paper, which represented the views of a number of members, was presented under the title, "The Passenger Car for the Fleet vs. the Passenger Car for John Public." Several members attending the meeting discussed this subject, while written comments from absentee members were read by the chairman.

In presenting his paper, Mr. Wotowitch established the fact that automobile transportation is a necessity for a salesman. This form of transportation is the presentday method of soliciting business which demands speed in making calls and mobility which is not provided by any other means of transportation.

Whether the car should be company-owned or furnished by the salesman is a matter which each company seems best able to handle for itself. The cost per vehicle is usually the common division for arriving at a solution to the problem.

Besides the investment, and other charges incident to the operation of the automobile such as depreciation, insurance, storage, repairs, etc., a company is confronted with other problems in arriving at its decision as to whether or not the company or the salesman should provide the car. For example, there is the driver's temperament to consider, his relative interest in the car when provided by the company as compared with his interest in a car which he owns himself. A company car can be supervised as far as maintenance and appearance are concerned and can also make use of the company identification which has advertising value. When a car is provided by a salesman, he is more independent.

It is conceded that the company is usually better able to finance and garage the car. However, the driver should be held responsible for its proper care. The company with which the speaker is connected adopts the plan of having the salesman provide the car and allows the employee from $2-$3 per day for cars used in company business. Insurance coverage is required of which the company pays half the premium.

In the composite paper, which was discussed, it was pretty generally conceded that the regular passenger car vehicle is suitable for fleet use. It is obviously out of the question to expect a specialized car for salesmen and other fleet users when the method of production in this country is understood. Any requirements which differ from those of the standard vehicle can be readily incorporated to meet each particular need. However, it was mentioned that standard vehicles could be made more suitable for sales work if access to the rear deck was simplified so that salesmen would be able to store literature and other material and samples. One point in particular was made of the obstruction provided by the position of the spare tire carrier and tire, which often resulted in soiled clothing when the rear deck was used for storage purpose.

Leather upholstery was generally recommended or an improved fabric upholstery which is easy to clean, rather than the velour and whipcord materials with which regular passenger cars are provided.

Greater accessibility which will result in decreased maintenance charges for minor repairs was also emphasized as a desirable consideration for motor car designers and manufacturers. Safety glass was also considered desirable.

Because of the amount of driving which the salesman is obliged to do in the course of his work, comfort was stressed as essential for passenger car type used in sales work. Good vision, elimination of exhaust gases, adjustable drivers' seats, the elimination of vibration in the car bodies which contribute to driver's fatigue were advocated.

Several of those contributing to this discussion mentioned particularly the desirability of providing adequate front and rear bumpers for the protection of the car in the event of accident.

The steering should be safe, easy and adjustable.

MAJOR SPECIFICATIONS AND MECHANICAL DETAILS

Make and Model	Weight—5-P. Sedan	Wheel Base	Engine Make	Thermostat Used	Valve Arrangement	Cylinders	Bore and Stroke	Piston Disp.	Compression Ratio	Tax H. P.	Brake, H.P. and Peak R. P. M.	Pist. Make or Material	No. Main Br.	Oil Purifier	Fuel Cleaner	Carburetor	Air Cleaner
Auburn 8-98	3916	127-136	Lyc	Dole	L	8	3 x4¾	268	*5.26	28.8	98@3400	*Alum	5	Pur	—	Sch	No
Austin	§1130	75	Own	——	L	4	2.2x3	45.6	5.1	7.8	13@3000	Alum	2	—	—	Tll	No
Buick 8-50	3170	114	Own	Bish-Bab	O	8	2⅞x4¼	220.7	4.75	26.45	77@3200	CI	5	AC	AC	Mar	AC
Buick 8-60	3795	118	Own	Bish-Bab	O	8	3⅛x4⅝	272.6	4.63	30.02	90@3000	CI	5	AC	AC	Mar	AC
Buick 8-80	4255	124	Own	Bish-Bab	O	8	3⅜x5	344.8	4.5	35.12	104@2800	CI	5	AC	AC	Mar	AC
Buick 8-90	4340	132	Own	Bish-Bab	O	8	3⅜x5	344.8	4.5	35.12	104@2800	CI	5	AC	AC	Mar	AC
Cadillac V-8	4645	134	Own	Yes	LV	8	3⅜x4⅛	353	5.35	36.45	95@3000	CI	3	AC	Gas	Own	No
Cadillac V-12	5480	140-143	Own	Own	O	12	3⅛x4	368	5.5	46.9	135@3400	CI	4	AC	Gas	Own	No
Cadillac V-16	6100	148	Own	Yes	O	16	3 x4	452.0	5.50	57.5	165@3400	CI	5	AC	Gas	Own	No
Chevrolet	2685	109	Own	No	O	6	3⅛x3¾	194.0	5.00	26.3	50@2600	CI	3	—	AC	Car	AC
Chrysler 6	2850	*175⅞	Own	Yes	L	6	3¼x4⅜	217.8	5.35	25.35	80@3400	*Alum	4	—	AC	Sch	Yes
Chrysler 8 De L.	——	187 9/16	Own	Yes	L	8	3¼x4¼	282.1	5.20	33.80	100@3400	*Alum	5	Yes	Yes	Str	Yes
Chrysler Imp. 8	4725	*211	Own	Yes	L	8	3½x5	384.8	5.00	39.2	125@3200	*Alum	9	Yes	AC	Str	Yes
Cord (Fr. Wh. D.)	4620	137½	Lyc	——	L	8	3¼x4½	298.6	5.25	33.8	115@3300	*Alum	5	Pur	AC	Sch	No
De Soto Six	2695	*169 5/16	Own	Yes	H	6	3¼x4⅛	205.3	5.35	25.35	72@3400	*Alum	4	—	AC	Car	Yes
De Soto Eight	3025	*176⅞	Own	Yes	L	8	2⅞x4¼	220.7	5.40	26.45	77@3400	*Alum	5	—	AC	Str	Yes
De Vaux 6-75	2810	113	Hall	Dole	L	6	3⅜x4	214.7	5.41	27.34	70@3400	Alum	4	AC	Ste	Tll	AC
Dodge Six	2820	*176 13/32	Own	Yes	L	6	3¼x4¼	211.5	5.31	25.35	74@3400	*Alum	4	No	AC	Car	AC
Dodge Eight	3174	*180 23/32	Own	Yes	L	8	3 x4¼	240.3	5.40	28.80	84@3400	*Alum	5	Pur	AC	Str	AC
Durant 612	2820	112	Con	Bish-Bab	L	6	3¼x4	199	5.32	25.4	71@3300	*Alum	4	AC	AC	Str	AC
Durant 614	3010	112	Con	Bish-Bab	L	6	3¼x4	199	5.32	25.4	71@3300	*Alum	4	AC	AC	Str	AC
Durant 619	2710	109	Con	Bish-Bab	L	6	3¼x4	199	5.32	25.4	71@3300	*Alum	4	AC	AC	Tll	AC
Essex Super Six	2750	**113	Own	——	†L	6	2⅞x4½	175.3	5.80	19.8	60@3300	Alum	3	—	Ste	Mar	AC
Ford A	2375	103½	Own	——	L	4	3⅛x4¼	200.5	4.22	24.03	40@2200	Alum	3	—	—	Zen	—
Fr'klin S 15 Trans.	3930	125	Own	Bish-Bab	†O	6	3¼x4⅜	274	5.30	29.4	100@3100	*Alum	7	AC	AC	Str	AC
Fr'klin S 15 Trans.	4130	132	Own	Bish-Bab	†O	6	3¼x4⅜	274	5.30	29.4	100@3100	*Alum	7	AC	AC	Str	AC
Fr'klin S 15 De L	4220	132	Own	Bish-Bab	†O	6	3¼x4⅜	274	5.30	29.4	100@3100	*Alum	7	AC	AC	Str	AC
Graham Pros. 6	3100	113	Own	Yes	L	6	3⅛x4½	207	5.45	23.4	70@3200	*Alum	7	—	AC	Sch	Yes
Graham Std. 6	3265	115	Own	Yes	L	6	3¼x4½	224	5.45	25.35	76@3400	*Alum	7	—	AC	DL	Yes
Graham Spl. 6	3330	115	Own	Yes	L	6	3¼x4½	224	5.45	25.35	76@3400	*Alum	7	—	AC	DL	Yes
Graham Spl. 8	3560	120	Own	Yes	L	8	3⅛x4	245	5.45	31.25	85@3400	*Alum	5	AC	AC	DL	Yes
Graham Cust. 8	4100	134	Own	Yes	L	8	3¼x4½	298	5.20	33.80	100@3400	*Alum	5	AC	AC	DL	Yes
Hudson Greater 8	3115	119-126	Own	——	L	8	2⅞x4½	233.7	5.80	26.4	87@3600	Alum	5	—	Ste	Mar	AC
Hupmobile Cen. 6	2985	114	Own	——	L	6	3¼x4¼	211.6	5.10	25.35	70@3200	Alum	4	AC	Ste	Str	Yes
Hupmobile Cen. 8	3275	118	Own	Pines	L	8	2⅞x4⅝	240.2	5.20	26.45	90@3200	Alum	5	Pur	Ste	Str	Yes
Hupmobile C	3730	121	Own	Pines	L	8	3 x4¾	268.6	5.20	28.8	100@3200	CI	5	Pur	Ste	Str	Yes
Hupmobile H & U	**	125-137	Own	Pines	L	8	3½x4¾	365.6	5.20	39.2	133@3400	Alum	5	Pur	Ste	Str	AM
La Salle V-8	4635	134	Own	Yes	LV	8	3⅜x4⅛	353	5.35	36.45	95@3000	CI	3	AC	Gas	Own	—
Lincoln	5300	145	Own	Ful	L	8	3½x5	384	5.23	39.2	120@2900	Alum	5	Pur	Ste	Str	Un
Marmon 70	2823	112¾	Own	Pines	L	8	2⅞x4¼	211.2	5.50	25.4	84@3400	Alum	5	AC	AC	Str	AC
Marmon 88	4175	130-136	Own	Pines	L	8	3¼x4⅝	315.2	5.50	33.8	125@3400	Alum	5	AC	AC	Str	AC
Marmon 16	5367	145	Own	Pines	O	16	3¼x4	490.8	6.00	62.5	200@3400	Alum	5	AC	AC	Str	AC
Nash 960	2800	114¼	Own	Bish-Bab	L	6	3⅛x4⅝	201.3	5.00	23.4	65@3200	*Alum	7	AC	AC	Car	AC
Nash 970	3000	116¼	Own	Bish-Bab	L	8	2⅞x4⅝	227.2	5.00	26.4	78@3300	*Alum	9	AC	AC	Str	AC
Nash 980	3360	121	Own	Bish-Bab	O	8	3 x4¼	240	5.25	28.8	94@3400	*Alum	9	AC	AC	Str	AC
Nash 990	4000	124-133	Own	Bish-Bab	O	8	3¼x4½	298.6	5.25	33.8	115@3600	*Alum	9	AC	AC	Str	AC
Oakland V-8	3260	117	Own	Yes	H	8	3 7/8x3⅜	251.0	5.00	37.8	85@3400	S St	3	—	AC	Mar	AC
Oldsmobile	2935	113½	Own	——	L	6	3⅜x4⅛	197.5	5.06	24.4	65@3350	CI	4	AC	AC	Str	AC
Packard 901-902	4570	129½-136½	Own	Yes	L	8	3⅛x5	320.0	6.00	32.5	110@3200	*Alum	9	Yes	Yes	Own	AC
Packard 903-904	5045	142⅛-147⅛	Own	Yes	L	8	3½x5	384.8	6.00	39.2	135@3200	*Alum	9	Yes	Yes	Own	AC
Peerless St. 8	3642	118	Con	Bish-Bab	L	8	2⅞x4¾	246.0	5.00	26.45	90@3200	*Alum	5	Pur	AC	Sch	AC
Peerless Master 8	4521	125	Con	Bish-Bab	L	8	3⅜x4½	322	5.00	36.45	115@3200	*Alum	5	Pur	AC	Sch	AC
Peerless De L.	4521	125	Con	Bish-Bab	L	8	3⅜x4½	322	5.00	36.45	115@3200	*Alum	5	Pur	AC	Sch	AC
Peerless Custom 8	4766	138	Con	Bish-Bab	L	8	3⅜x4½	322	5.00	36.45	120@3200	*Alum	5	Pur	AC	Sch	AC
Pierce-Arrow 43	4304	134-137	Own	Yes	L	8	3½x4¾	366	5.07	39.2	125@3000	*Alum	9	Han	AC	Str	Un
Pierce-Arrow 41-42	4831	142-147	Own	Yes	L	8	3½x5	385	5.07	39.2	132@3000	*Alum	9	Han	AC	Str	Han
Plymouth	2710	109	Own	——	L	4	3⅛x4¾	196.1	4.90	21.03	56@2800	*Alum	3	—	AC	Car	Yes
Pontiac	2845	112	Own	Yes	L	6	3 1/16x3⅞	200.0	4.90	26.3	60@3000	S St	3	—	AC	Mar	AC
Reo Royale 8-35	4650	135	Own	Pines	L	8	3⅜x5	358	5.30	36.48	125@3300	Alum	9	Han	AC	Sch	Own
Reo Royale 8-31	4375	131	Own	Pines	L	8	3⅜x5	358	5.30	36.48	125@3300	Alum	9	Han	AC	Sch	Own
Reo 8-21	3610	121	Own	Yes	L	8	3 x4¾	268.6	5.37	28.8	90@3300	*Alum	5	Han	—	Sch	Un
Reo 6-21	3525	121	Own	Yes	L	6	3⅜x5	268.3	5.30	27.3	85@3200	Alum	7	Han	—	Sch	Un
Reo Fly. Cloud 6-25	3950	125	Own	Yes	L	6	3⅜x5	268.3	5.30	27.34	85@3200	Alum	7	Han	V S	Sch	Un
Reo 8-25	4050	125	Own	Yes	L	8	3 x4¾	268.6	5.37	28.8	90@3300	*Alum	5	Han	V S	Sch	Un
Studebaker Six	2920	114	Own	Dole	L	6	3¼x4⅛	205.3	5.20	25.4	70@3200	CI	4	Pur	Ste	Str	No
Studebaker Dict. 8	3095	114	Own	Dole	L	8	3 1/16x3¾	221.0	5.00	30.0	81@3200	Alum	9	Pur	Ste	Str	AM
Studebaker Com. 8	3520	124	Own	Dole	L	8	3 1/16x4¼	250.4	5.20	30.0	101@3200	Alum	9	Pur	Ste	Str	Un
Studebak'r Pres 80	4250	130	Own	Dole	L	8	3½x4⅜	337	5.10	39.2	122@3200	*Alum	9	Han	Ste	Str	AM
Studebak'r Pres. 90	*4360	136	Own	Dole	L	8	3½x4⅜	337	5.10	39.2	122@3200	*Alum	9	Han	—	Str	AM
Stutz LA	4320	127½	Own	——	O	6	3⅜x4½	241.5	5.10	27.3	85@3150	*Alum	7	Wal	AC	Zen	Un
Stutz MA	4918	134½	Own	——	O	8	3⅜x4½	322	5.50	36.4	113@3300	*Alum	9	Wal	AC	Zen	AM
Stutz MB	4863	145	Own	——	O	8	3⅜x4½	322	5.50	36.4	113@3300	*Alum	9	Wal	AC	Zen	AM
Stutz DV 32	5240	134½	Own	Bish-Bab	O	8	3⅜x4½	322	5.10	36.4	161@3900	Alum	9	Wal	Ste	Sch	AM
Willys 6-97-98 D	*	110-113	Own	Var	L	6	3¼x3⅞	193	5.26	25.3	65@3400	CI	4	Flo	AC	Tll	Tll
Willys 8-80 D	3131	121	Own	Var	L	8	3⅛x4	245.4	5.26	31.25	80@3200	CI	5	Flo	AC	Tll	Tll
Willys-Knt. 66-D	3400	121	Own	Var	K	6	3⅜x4¾	255	5.26	27.3	87@3200	*Alum	7	Ski	Tll	Tll	Tll
Willys-Knight 95	3122	113	Own	Pines	K	6	2 1/16x4⅜	177.9	5.55	20.7	60@3400	*Alum	7	*	AC	Tll	AC

Motor Vehicle Heads Oppose Advertising of Car Speed

(Continued From Page 1)

motor vehicles in Massachusetts, expressed agreement with Mr. Griffin: "The oil and automobile companies," he said, "are trying to tell people to go a little faster in order to get the most out of their cars, while we are trying to tell them to go a little slower in order to avoid accidents." Mr. Ryan particularly mentioned advertising promising more pep from a given fuel.

Charles A. Harnett, commissioner of motor vehicles for New York, expressed agreement with Messrs. Griffin and Ryan.

Motor Vehicle Commissioner Wellington of Rhode Island, who has served in that capacity for twenty-three years, was elected president of the conference, with James P. Bickell, registrar of motor vehicles for Ontario, as vice-president and Harold G. Hoffman of New Jersey, secretary and treasurer.

The meeting concludes with a session today.

G. M. NINE MONTHS EARNINGS REACH $97,455,390.00

(Continued from Page 2)

preferred dividends, of $10,989,062, or 25 cents per share, on the common stock outstanding. This compares with earnings of $25,470,697 for the third quarter of last year, which, after the deduction for preferred dividends, amounted to 53 cents per share earned on the common stock outstanding.

"Cash, United States government and other marketable securities at September 30, 1931, amounted to $264,107,166, compared with $179,037,071 at December 31, 1930, and $202,064,960 at September 30, 1930. Net working capital at September 30, 1931, amounted to $318,526,557, compared with $281,037,636 at December 31, 1930, and $285,777,740 at September 30, 1930.

"For the nine months ended September 30 General Motors dealers in the United States delivered to consumers 800,234 cars, compared with 900,207 cars in the corresponding period of 1930. Sales by General Motors operating divisions to dealers in the United States amounted to 814,959 cars, compared with 896,329 cars in the first nine months of 1930. Total sales to dealers, including Canadian sales and overseas shipments, amounted to 939,846 cars, compared with 1,008,597 cars in the corresponding period of 1930.

"During the third quarter of 1931 General Motors dealers in the United States delivered to consumers 206,670 cars, compared with 242,378 cars in the corresponding quarter of 1930. Sales by General Motors operating divisions to dealers in the United States amounted to 189,285 cars, compared with 216,757 cars in the third quarter of 1930. Total sales to dealers, including Canadian sales and overseas shipments, amounted to 215,649 cars, compared with 244,378 cars in the corresponding quarter of 1930."

OF PRESENT AMERICAN PASSENGER CAR MODELS

Make and Model	Front End Drive	Ignition System	Gen. and Starter	Clutch	Transmission Make	Transmission Speeds	Transmission Type	Universals	Rear Axle	Ratio	Brakes	Steering Gear	Spring Rear	Springs Shackles	Chassis Lubric.	Tires
Auburn 8-98	Chain	Del-R	*Del-R	Long	D	3	LGS-F-SM	U	Col ½	*4.45	S D	Ross	S 56¾	Own	Bijur	17x5.50
Austin	Gear	Aut-L	*Aut-L	Rock	WG	3	——	S	Sal ½	5.25	M	Say-B	Cant	Own	Al-Z	18x3.75
Buick 8-50	Tex	Del-R	Del-R	Own	M	3	SM	O	Own ½	4.54	Bendix	Sag	S 54½	Tryon	Al-Z	18x5.25
Buick 8-60	Tex	Del-R	Del-R	Own	O	3	SM	O	Own ¾	4.45	M	Sag	S 55¼	Own	Alem	19x5.50
Buick 8-80	Tex	Del-R	Del-R	Own	O	3	SM	O	Own ¾	4.27	M	Sag	S 58⅞	Own	Al-Z	19x6.50
Buick 8-90	Tex	Del-R	Del-R	Own	O	3	SM	O	Own ¾	4.27	M	Sag	S 58⅞	Own	Al-Z	19x6.50
Cadillac V-8	Morse	Del-R	Del-R	Own	O	3	SM	S	Own ¾	4.75	Own-M	Sag	S 58	Own	Al-Z	19x6.50
Cadillac V-12	Morse	Del-R	Del-R	Own	O	3	SM	S	Own ¾	——	Own-M	Sag	S 58	Own	Alem	19x7.00
Cadillac V-16	Morse	Del-R	Del-R	Own	O	3	SM	S	Own ¾	4.39	Own	Sag	S 60	Own	Alem	19x7.00
Chevrolet	Var	Del-R	*Del-R	Own	O	3	——	O	Own	4.10	M	Sag	S 54	——	Alem	19x4.75
Chrysler 6	Morse	Del-R	Del-R	Borg	O	3	BW-F	U	Own ½	4.60	H	War	S 53 3/16	Tryon	Al-Z	19x5.25
Chrysler 8, De L.	Morse	Del-R	Del-R	Borg	O	4	BW-F	—	Own ½	4.30	H	——	S 54⅝	——	Al-Z	17x6.50
Chrysler Imperial 8	Morse	Del-R	Del-R	Borg	O	4	BW-F	—	Own ½	3.82	H	Ross	S 57½	——	Al-Z	18x7.00
Cord (Fr. Wh. Dr.)	Link	Del-R	*Del-R	Long	D	3	——	*	Col F	4.80	H	Gem	S 62	Own	Bijur	18x7.00
De Soto Six	Var	Del-R	Del-R	Borg	O	3	BW-F	—	Own ½	4.33	H	Own	S 53⅜	——	Al-Z	19x5.00
De Soto Eight	Var	Del-R	Del-R	Borg	O	3	BW-F	—	Own ½	4.60	H	Own	S 54⅝	Rub B	Al-Z	19x5.25
De Vaux 6-75	Morse	Aut-L	*Aut-L	Borg	N	3	NP-F	S	NP ½	4.40	S D	NP	S 54¼	Tryon	Al-Z	19x5.00
Dodge Six	Morse	Del-R	Del-R	Borg	O	3	BW-F	S	Own ½	4.60	H	War	S 55¼	Tryon	Al-Z	19x5.00
Dodge Eight	Morse	Del-R	Del-R	Borg	O	3	BW-F	S	Own ½	4.60	H	War	S 54⅝	Rub B	Al-Z	18x5.50
Durant 612	Morse	Aut-L	*Aut-L	Borg	W	3	——	S	Own ½	4.40	S D	Own	S 55	Tryon	Al-Z	19x5.00
Durant 614	Morse	Aut-L	*Aut-L	Borg	W	3	——	S	Own ½	4.40	S D	Own	S 55	Tryon	Al-Z	19x5.00
Durant 619	Morse	Aut-L	*Aut-L	Borg	W	3	——	S	Own ½	3.90	S D	Own	S 54	Tryon	Al-Z	19x4.75
Essex Super Six	Morse	Aut-L	*Aut-L	Own	O	3	BW-F	S	Own ½	5.40	Bendix	Gem	S 54⅛	Own	Alem	19x5.00
Ford A	Var	Own	*Own	Own	O	3	——	S	Own ¾	3.78	M	Gem	S Tr39	Own	Al-Z	19x4.75
Franklin S 15 Trans.	Chain	Del-R	*Del-R	Br-L	*	—	——	M	Own ½	‡4.54	H	Gem	El 42	None	Al-Z	19x6.50
Franklin S 15 Trans.	Chain	Del-R	*Del-R	Br-L	*	—	——	M	Own ½	‡4.54	H	Gem	El 42	None	Al-Z	19x6.50
Franklin S 15 De L	Chain	Del-R	*Del-R	Br-L	WG	3	——	S	Own ½	‡4.73	H	Gem	El 42	None	Al-Z	19x6.50
Graham Pros. 6	Link	Del-R	*Del-R	Long	—	3	BW-F	—	——	4.45	H	Ross	S 54	ERS	Al-Z	19x5.00
Graham Std. 6	Link	Del-R	*Del-R	Long	—	3	BW-F	—	——	4.30	H	Ross	S 54	ERS	Al-Z	5.50x18
Graham Spl. 6	Link	Del-R	*Del-R	Long	—	4	BW-F	—	——	4.09	H	Ross	S 54	ERS	Al-Z	6.00x17
Graham Spl. 8	Link	Del-R	*Del-R	Long	—	4	BW-F	—	——	4.09	H	Ross	S 54	ERS	Al-Z	6.00x17
Graham Cust. 8	Link	Del-R	*Del-R	Long	—	4	BW-F	—	——	4.09	H	Ross	S 56	ERS	Al-Z	6.50x18
Hudson Greater 8	Morse	Aut-L	*Aut-L	Own	O	3	BW-F	S	Own ½	4.64	Bendix	Gem	S 54⅛	Own	Alem	18x5.50
Hupmobile Cen 6	Chain	Aut-L	*Aut-L	Borg	WG	3	BW-F	M	Sal ½	4.70	S D	Ross	S 53	Tryon	Al-Z	19x5.50
Hupmobile Cen 8	Morse	Aut-L	*Aut-L	Borg	WG	3	BW-F	U	Sal	4.55	S D	Ross	S 52¾	Rub B	Al-Z	19x5.50
Hupmobile C	Morse	Aut-L	*Aut-L	Long	WG	3	BW-F	U	Own ½	4.55	S D	Ross	S 54	Own	Alem	19x6.00
Hupmobile H and U	Morse	Aut-L	*Aut-L	Long	WG	3	BW-F	U	Own ½	4.07	S D	Ross	S 57	Own	Alem	19x6.50
La Salle V-8	Morse	Del-R	Del-R	Own	O	3	SM	S	Own ¾	4.75	Own-M	Sag	S 58	Own	Alem	19x6.50
Lincoln	——	Aut-L	*Aut-L	Long	O	3	BW-F	S	Tim F	4.58	Bendix	Own	S 62	Own	Alem	7.00x19
Marmon 70	Diam	Del-R	*Del-R	Rock	WG	3	BW-F	S	Sal ½	4.70	Bendix	Ross	S 54⅛	Tryon	Al-Z	29x5.50
Marmon 88	Diam	Del-R	*Del-R	Rus	D	3	BW-F	S	Sal ½	4.45	Bendix	Ross	S 60	Rub B	Al-Z	19x6.50
Marmon 16	Diam	Del-R	Del-R	Rus	M	3	BW-F	S	Sal ½	3.78	Bendix	Ross	S 60	Rub B	Al-Z	18x7.00
Nash 960	Cel	Aut-L	*Aut-L	Borg	O	3	SM-DG-F	—	Own ½	4.73	M	Ross	S 50⅞	——	Alem	19x5.00
Nash 970	Diam	Aut-L	*Aut-L	Borg	O	3	SM-DG-F	—	Own ½	4.73	M	Ross	S 50⅞	——	Alem	19x5.25
Nash 980	Diam	*Aut-L	*Aut-L	Borg	O	3	SM-DG-F	—	Own ½	4.46	M	Gem	S 55	——	Bijur	18x6.00
Nash 990	Diam	*Aut-L	*Aut-L	Borg	O	3	SM-DG-F	—	Own ½	4.50	M	Gem	S 57⅛	——	Bijur	19x6.50
Oakland V-8	Morse	Del-R	Del-R	Own	M	3	SM	M	Own ½	3.90	M	Sag	S 54½	Inlox	Al-Z	28x5.50
Oldsmobile	Chain	Del-R	Del-R	Borg	M	3	SM	U	Own ½	4.54	Bendix	Sag	S 54½	Tryon	Alem	28x5.25
Packard 901-902	Morse	N E	Dyn	Long	O	4	SM	M	Own ½	4.66	M	Own	S 60½	Own	Bijur	6.50x19
Packard 903-904	Morse	N E	Dyn	Long	O	4	SM	M	Own ½	4.66	M	Own	S 60½	Own	Bijur	7.00x19
Peerless St. 8	Morse	Aut-L	*Aut-L	Rock	WG	3		S	Sal ½	4.70	Bendix	Ross	S 56 5/16	Rub B	Alem	29x5.50
Peerless Master 8	Morse	Aut-L	*Aut-L	Rock	WG	3	BW-F	S	Sal ½	4.45	Bendix	Ross	S 60	Rub B	Alem	31x6.00
Peerless De L.	Morse	Aut-L	*Aut-L	Rock	WG	3	BW-F	S	Sal ½	4.45	Bendix	Ross	S 60	Rub B	Alem	31x6.00
Peerless Custom 8	Morse	Aut-L	*Aut-L	Rock	WG	3	BW-F	S	Sal ½	4.45	Bendix	Ross	S 60	Rub B	Alem	31x6.50
Pierce-Arrow 43	Gear	Del-R	Del-R	Long	O	3	BW-F	S	Own ½	4.08	Bendix	Ross	S 60	Faf	Al-Z	19x6.50
Pierce-Arrow 41-42	Chain	Del-R	Del-R	Long	O	3	BW-F	S	Own ½	*	Bendix	Ross	S 61	Faf	Al-Z	18x7.00
Plymouth	Var	Del-R	Del-R	Own	O	3	BW-F	O	Own ½	4.33	H	War	S 53⅜	Tryon	Al-Z	19x4.75
Pontiac	Morse	Del-R	Del-R	Own	O	3	——	M	Own ½	4.55	M	Sag	S 54	Inlox	Al-Z	29x5.00
Reo Royale 8-35	Morse	Del-R	Del-R	Long	O	3	SM	U	Own ½	4.07	H	Ross	S 57½	Own	Far	6.50x18
Reo Royale 8-31	Morse	Del-R	Del-R	Long	O	3	SM	U	Own ½	4.07	H	Ross	S 57½	Own	Al-Z	6.50x18
Reo 8-21	Link	Del-R	Del-R	Long	O	3	SM	U	Own ½	4.42	H	Ross	S 55¾	Tryon	Al-Z	17x6.00
Reo 6-21	Morse	Del-R	Del-R	Long	O	3	SM	U	Own ½	4.07	H	Ross	S 55¾	Tryon	Al-Z	17x6.00
Reo Fly. Cloud 6-25	Morse	Del-R	*Del-R	Long	O	3	SM	U	Own ½	4.42	H	Ross	S 55¾	Own	Al-Z	17x6.50
Reo 8-25	Link	Del-R	*Del-R	Long	O	3	SM	U	Own ½	4.42	H	Ross	S 55¾	Own	Al-Z	17x6.50
Studebaker Six	Chain	Del-R	*Del-R	Long	O	3	BW-F	S	Own ½	4.73	Bendix	Ross	S 54	Tryon	Alem	19x5.25
Studebaker Dict. 8	Var G	Del-R	*Del-R	Long	O	3	BW-F	S	Own ½	4.73	Bendix	Ross	S 54	Tryon	Alem	19x5.25
Studebaker Com. 8	Var G	Del-R	*Del-R	Long	O	3	BW-F	S	Own ½	4.73	Bendix	Ross	S 56	Faf	Al-Z	19x6.00
Studebaker Pres. 80	Var G	Del-R	Del-R	Long	O	3	BW-F	S	Own ½	4.31	Bendix	Ross	S 60	Faf	Al-Z	19x6.50
Studebaker Pres. 90	Var G	Del-R	Del-R	Long	O	3	BW-F	S	Own ½	4.31	Bendix	Ross	S 60	Faf	Al-Z	19x6.50
Stutz LA	——	Del-R	Del-R	Borg	D	4	——	U	Sal ½	4.75	H	Gem	S 60	Own	Bijur	19x6.00
Stutz MA	——	Del-R	Del-R	Long	D	4	——	M	Tim ½	4.75	H	Gem	S 62¼	Own	Bijur	20x6.50
Stutz MB	——	Del-R	Del-R	Long	D	4	——	M	Tim ½	4.75	H	Gem	S 62¼	Own	Bijur	20x7.00
Stutz DV 32	——	Del-R	Del-R	Long	D	4	——	M	Tim ½	4.75	H	Gem	S 62¼	Own	Bijur	18x7.00
Willys 6-97-98 D	Chain	Aut-L	*Aut-L	Borg	O	3	BW-F	S	Own ½	4.60	Bendix	Own	*S 49¾	Tryon	Alem	19x5.00
Willys 8-80 D	Chain	Aut-L	*Aut-L	Borg	O	3	BW-F	S	Own ½	4.40	Bendix	Ross	S 56	Tryon	Alem	18x5.50
Willys-Knight 66 D	Chain	Aut-L	*Aut-L	Rock	O	3	BW-F	S	Own ½	4.18	Bendix	Ross	S 56	Tryon	Alem	18x6.00
Willys-Knight 95	Chain	Aut-L	Aut-L	Borg	O	3	BW-F	S	Own ½	4.89	Bendix	Gem	S 51	Tryon	Alem	19x5.00

KEY TO ABBREVIATIONS

Weight—‡Austin standard 2 passenger coupe. **Hupmobile model H weighs 4,095 pounds, and model U 4,360 pounds. *Studebaker, 7 pass. sedan. *Willys 6-97D weighs 2,670 and the 98 D weighs 2,706 pounds.

Wheel Base—*Over all length of chassis instead of wheel base, which manufacturers refuse to give. **Essex, seven-passenger sedan available on 119-inch wheel base.

Engine Make—Con, Continental; Lyc, Lycoming, Hall, De Vaux-Hall Motors Corp.

Thermostat—Bish-Bab, Bishop & Babcock; Dole, Dole Valve Co., Chicago, Ill.; Ful Fulton Co.; Pines, Pines Winterfront; Var, various makes.

Valve Arrangement—L, L head; H, horizontal; O, overhead; K, sleeve valve; LV, V-type L head.
*Air cooled. †Thermo syphon water circulation.

Compression Ratio—*Optional on the Auburn.

Piston Material—*Alum, aluminum with invar struts; Alum, aluminum alloy; CI, cast iron; S St, semi-steel.

Oil Purifier—Pur, Purolator; Wal, Wall; Han, Handy; AC, AC Spark Plug Company; Ste, Stewart-Warner; Ski, Skinner; Flo, Floato.
*Using both Floato & Skinner.

Fuel Cleaner—AC, AC Spark Plug Co.; Gas Gascolator; Ste, Stewart-Warner; Til, Tillotson; V-S, Van Sicklen.

Carburetor—Sch, Wheeler Schebler; Zen, Zenith; Mar, Marvel; Car, Carter; Str, Stromberg; DL Detroit Lubricator; Til, Tillotson.

Air Cleaner—AC, AC Spark Plug Company; AM, Air Maze; Han, Handy; Un United; Til, Tillotson.

Front End Drive—Link, Link Belt; Tex, Texolite; Cel, Celeron; Diam, Diamond Chain; Morse, Morse Chain Company; Var, various makes of chains; Var-G, various makes of gears.

Ignition, Generator and Starter—Aut-L, Auto-Lite; Del-R, Delco-Remy; Dyn, Owen-Dyneto Corp.; N E, North East.
*Nash,—Indicates twin ignition.
*Bendix starter used.

Clutch—Borg, Borg & Beck; Br-L, Brown-Lipe; Rock, Rockford Machine; Long, Long Clutch Company; Rus, Russell Mfg. Co.

Transmission Make—D, Detroit Gear; WG, Warner Gear Company; M, Muncie Gear Company; O, Own; N, New Process Gear Corp.; W, Warner Corp.
*Franklin Transcontinent models are equipped with both Warner and Detroit 3 or 4 speed gear sets, according to body type.

Transmission Type—DG, Detroit Gear & Machine Co.; LGS, The LGS Corp.; F, Free Wheeling; SM, Synchro Mesh; BW, Borg-Warner; NP—New Process Gear Corp.

Universals—U, Detroit Universal Products; S, Spicer Mfg. Corp.; O, Own; M, Mechanics Universal Joint Company.

Rear Axle—Col, Columbia; Sal, Salisbury; Tim Timken; N.P., New Process Gear Corp.; ½-Semi-floating; ¾-¾ floating; F-Full floating.

Ratio—Optional on the Auburn. *On Pierce Arrow 43, 137 in. W. B. rear axle ratio is 4.42. On model 41 rear axle ratio is 4.42. On model 42 ratio is 4.23.
†The axle ratio varies with body types on Franklin models.

Brakes—H, hydraulic; M, mechanical; SD, steeldraulic; Bendix, Bendix Brake Corp.

Steering Gear—Gem, Gemmer; Ross, Ross Gear and Tool Company; Sag, Saginaw; Say-B Saylor-Beall Manufacturing Company; War, Warner; N.P., New Process Gear Corp.

Rear Springs—S, semi-elliptic; E, full elliptic; Cant, semi-cantilever; S-Tr, semi-transverse. *Rear spring length on Willys, 6-98D is 51 in.

Spring Shackles—Tryon, Willys-Morrow Company; Rub B, Rubber Shock Insulator Company; Faf, Fafnir Bearing Company; ERS, Eaton Rubber Bushings; Inlox—Inland Mfg. Co.

Chassis Lubricator—Alem, Alemite; Al-Z, Alemite Zerk; Bijur, Bijur Lubricating Corp.; Far, Farval.

35-CAR-ABREAST ROAD ON N. J. BRIDGE APPROACH

Trenton, N. J., Oct. 23.—When the George Washington Memorial Bridge is opened tomorrow, the motoring public of New York and New Jersey will find that the New Jersey State Highway Commission has made rapid accomplishment in building approaches. The New Jersey approach will accommodate thirty-five automobiles abreast.

The great span across the Hudson River will open on the Jersey side into one of the most complete approach systems in the world. Not all the work has been completed on this side of the river, but the main approach will be ready, and traffic conditions north and south will have been restored to normal, so that no more long delays will be involved in getting from Jersey City to points north of Fort Lee on the Sylvan Driveway.

NOTICE

Please see the fifth column to the left of this advertisement giving steering gear information. Notice the outstanding Ross predominance. The actual figures are:

ROSS

35

FIRST Competitor

14

SECOND Competitor

12

THIRD Competitor

4

Build Their Own

9

ROSS CAM AND LEVER steering gears predominate not only in passenger car field, but in truck and bus fields as well.

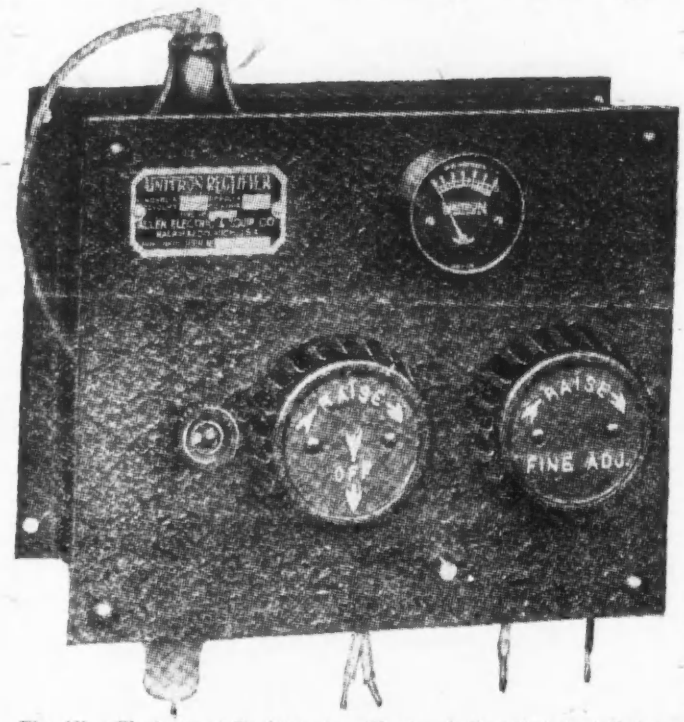
ROSS GEAR & TOOL CO.
Lafayette, Indiana

ROSS
Cam & Lever
Steering

There is only one CAM & LEVER Steering Gear

Production - - Engineering - - Factory

Allen Electric Offers New Unitron Battery Charger



The Allen Electric and Equipment Company, Kalamazoo, Mich., is announcing a new Allen-Unitron battery charger, No. 15, outstanding features of which are stated to be two control dials for fine adjustment of the charging rate, a two-way socket designed to give longer bulb life.

The Unitron No. 15 is designed to charge fifteen six-volt batteries, or the equivalent, at six amperes or less. The bulb is guaranteed for 1,000 hours, and this is the only replacement necessary. Control of the charging rate is in fractional amperes. A push-button type switch lights the bulb. An oversize transformer is fitted to keep the heat to a minimum.

The two bulb sockets installed are one in an upright position, the other downward. The bulb operates in either, and reversing prolongs the life. The two adjusting coils control the charging rate, one for coarse control, the other for fine. The laminations of the transformer are stated to be of the highest grade iron. The transformer coil is wound with rectangular wire. An accurate ammeter is included in the instrument. The direct-current leads for battery connections extend from the bottom of the charger. The metal case has an asbestos panel three-eighths of an inch thick. In size it is 12 x 7 x 10 inches and is designed for wall mounting. The list on the fifty or sixty cycle is $39.50.

NEW WESTINGHOUSE CATALOG DESCRIBES MULTI-SPEED DRIVE

Westinghouse - Wise multi - speed drive is the subject of a new illustrated leaflet, L.20520, issued by the Westinghouse Electric and Manufacturing Company. This drive consists of an adjustable speed reducer built into a standard induction motor. Instant speed changes can be made with the motor running under load. Standard sizes range from ½ to 15 horse power.

The Westinghouse-Wise multi-speed drive is a combination of an adjustable speed reducer and a constant speed induction motor in a single compact unit. Providing four different speeds at constant horse power, it permits an extremely simple and highly efficient direct drive for individual operation of machine tools, conveyors, agitators, mixing machines, coil winders, filters, stokers, dryers and other production equipment in cement plants, lumber mills, mining operations, glass plants, steel mills, sugar refineries, textile mills, laundries, chemical plants, bakeries and other industries.

Instant speed changes can be made with this drive under load and with the motor running at full speed.

Standard sizes include twenty-six different motor ratings of one-half to fifteen horse power, with a maximum speed reduction of about 3.75 to 1 in each size. This range in power and the great many different output speeds obtainable in each size by using different combinations of motor speeds and gear ratios, make the Westinghouse-Wise multi-speed drive desirable for a wide variety of adjustable speed requirements. Its low initial cost, simple construction and operation, highly efficient performance and ease of application are practical assurance of low cost installation, operation and upkeep.

With four adjustable speed reductions combined in the same unit with the motor, belt driven equipment can be converted to direct drives, overhead lineshafting and countershafts on machines can be eliminated, and an attractive, compact assembly of the drive and driven equipment secured.

Motor feet support entire drive, which requires only slightly more space than a motor. Mounting and aligning operations are greatly simplified by confining entire drive to one easily handled piece of equipment.

Small nonplanetary type of gear unit connected direct to the motor shaft simplifies drive parts. No adjustments are required.

By merely moving hand lever on exterior of gear unit, operating speeds can be instantly increased or decreased while the motor is running at full speed under load and without affecting the constant horse power output. Freedom from slippage and vibration assures uniform operating speeds.

Combating Brake Drum Heat and Wear

Giant pneumatic tires ushered in the present era of high-speed truck and bus transportation. High speeds of thirty-five to sixty miles per hour have smoothed the way to more profitable operation, but have created new problems which affect maintenance costs in no small way, says a report of the Dayton Steel Foundry Company, Dayton, O.

High speeds, powerful brakes, frequent brake application and quick stops at high speeds make terrific demands on tires and brake linings. High temperatures are destructive to brake linings and tires, and the brake drum is the source of heat. Brakes convert the energy of motion into heat and the problem lies in the means of holding temperatures below the danger point. The brake drum must be constructed so that it will consistently and effectively resist wear and prevent scoring; and the wheel must be designed and constructed so that it will consistently and effectively dissipate brake drum heat.

An interesting report has been received on the new brake drum metal

New Dayton Brakedrum

developed by metallurgists at the Dayton Steel Foundry. It has been found, through many experiments and road tests, that brake drum iron, with the most even distribution of fine, uniform grains of graphite carbon, will have in exact ratio more strength and longer wearing qualities. The new Dayton brake drum is electric furnace high-test molybdenum iron, with fine nodular graphite evenly distributed, and with a strong sorbitic pearlite structure, giving both strength and resistance to wear. The new brake drum metal, on which a patent is now pending, was finally perfected after three years of research, experiments and tests.

Up to the present time, according to E. Piwowarsky of the University of Aachen, Germany, the one known means of determining the distribution of graphitic carbon, as to its size in a given gray iron analysis and section, is temperature. Therefore, in a casting where the melting temeperature is 2,900 to 3,000 degrees Fahrenheit the graphite is in a finely divided state, hence the structure is dense. However, if the melting temperature is only 2,700 degrees and below, the metal of the same analysis and section will be correspondingly coarse. The bath in the electric furnace is not subjected to disturbing influences such as gases, coke and air blast. Therefore, in addition to the fact that the high temperature of the electric arc produces this dense metal, it is the one positive means whereby the bath is always under control. Consequently the product is a dense metal, and a dense metal consistently.

The coefficient of friction is the force of moving one object over another under pressure. This can be demonstrated by rubbing together two Johansson gauge blocks. The more the grains or tissues of the one object can be contacted with the grains or tissues of another with ject by means of a given pressure, the greater is the coefficient of friction. Hence, since the many fine grains of the dense metal afford more contact than coarse metal with the braking material, the result is a much higher coefficient of friction.

Brake drum noise is caused by the violent vibration of parts of the surface of the drum where the brake lining does not touch under pressure of the brakes. Here, again, heat plays a destructive part. Frequently repeated applications of the brakes may easily raise the surface temperature to a high degree and distort the drum. Subsequent applications of brakes on the out-of-round drum not fully contacted by the lining will cause squealing.

The cast iron drum, due to its increased combined sarbon, is not susceptible to such a tearing action, and its crystals may be compared with the laminations of iron with graphite. So it is difficult to start a tearing and scratching action in a cast iron drum, and, if started, the action would be immediately stopped by the graphite particles in its structure.

The wheel presents the most practical method of combating brake-drum heat, according to G. M. Sprowls of the Goodyear Tire and Rubber Company in his paper on "Improving Tire Service and Mileage by Reducing Effect of Brake-Drum Heat." Sprowls says: "Spoke-type wheels, with baffles to deflect air currents from between the tires, and heat-rays interceptors, to reduce direct radiation of heat from brake drum to rim, aid greatly in reducing temperatures." Openings in the brake drum do not provide sufficient ventilation when the drum is almost entirely inclosed. Openings, in the case of internal expanding brakes, have been found to admit dust and foreign particles, which scratch and score the drum. To protect the lining and the tires from excessive heat, it is necessary to play currents of cool outside air against outside parts of the drum where the most heat is concentrated. Tests show that the spoke wheel actually cools by continually forcing air currents against the brake drum and the inside wall of the inside tire and rim where heat is most destructive to tires and brake linings. F. C. Stanley of the Raybestos Company, in a speech at the A. E. R. A. convention, stated that internal expanding brakes offer better means of heat dispersal. This is because the outside of the brake drum is not covered when this type is used and air from spoke wheels can pass directly over the drum.

EDUCATIONAL FILM DEPICTS PROPER CAR LUBRICATION

The details of "Automobile Lubrication," a vital matter to the millions of motorists are visualized in a new one-reel educational picture fi made under the sup - vision of the United States Bureau of Mines, Department of Commerce, in co-operation with an industrial concern.

For economical and safe performance, correct lubrication must be obtained on all parts of the car, a title emphasizes. The early scenes of the film show an automobile owner driving into a modern greasing station, where the offer is made to explain the various operations involved in a complete lubrication job. The used oil is drained for two reasons, it is explained. First: It has become contaminated with dirt, carbon, metal particles, and maybe water. Some of these are removed by the filter, but not all. A close-up view is given of crankcase oil flowing over a glass slide, showing the solid dirt particles passing across. Most lubricating oils become diluted with portions of unburned fuel. Cold motor, frequent use of the choke, and overrich fuel mixture are the more common causes of oil dilution.

The crank case is cleaned with flushing oil, which removes deposits and dirt from the oil lines, pockets and other points where they have collected. To be sure that the customer receives the proper grade of oil, a chart of recommendations is consulted. To meet seasonal requirements the old oil in the transmission and differential is drained and flushed out. The capacities of the transmission and differential are given on a chart. The heavy transmission oil is recommended for summer, whereas a lighter oil should be used in winter.

Other special lubricants for worm drives, hypoid gears, free wheeling transmissions and special operating conditions are shown the customer. He is told that his car requires a special steering gear lubricant to give easy, quiet steering and good lubrication. Some steering gears require oil and others a still different type of lubricant. He is told that his front wheel bearings require a grease of sufficient body to prevent leaking out on the brake-drums, and yet fluid enough to give good lubrication and minimum friction.

The customer is told that his car's universal joint is lubricated directly from transmission. Others require oil and still others require a special fiber grease that will not be thrown away from bearing surfaces of the joint. A special water pump grease is used for water pumps. It must be insoluble in water, so that it will not be removed by the cooling water.

Pressure-gun grease is applied to fittings under sufficient pressure to force out old cakes of grease and thoroughly lubricate the bearings.

In some cases chassis parts are lubricated with a central oiling system, or with individual oil cups. These require special oil. Special types of oil are also required for lubricating the wet clutch and the shackle bolts.

A light-bodied oil is used on the generator, starter, door hinges, etc. Brake linkage and other parts not equipped with fittings are all taken care of with an oil can. The springs as well as the body joints under the car are sprayed to give easier riding and eliminate squeaks. Finally a thorough check is made to be sure that no detail is overlooked, and the customer is advised to come in at regular intervals for service. Regular lubrication will add many thousands of miles to the life of his car, as proper lubrication reduces wear, he is told.

HANDY CORP. OFFERS NEW CONSTANT SPEED WIPER

A full-vision type electric windshield wiper for passenger car use, which operates at constant speed, regardless of motor pull, is announced by the Handy Governor Corporation of Detroit. The new wiper is a direct development of the heavy-duty Handy, which is already in wide use on trucks and buses.

Powered by its own electric motor, the Handy operates with absolute independence from the car engine. It thus provides protection, even when accelerating, hill-climbing or traveling at high speed.

The electrical power is also of advantage because of its ability to cope successfully with heavy snow. Additional battery drain is said to be less than that implied by an ordinary spotlight, and is, of course, limited to periods in which the wiper is in use.

THE HILLMAN MINX, A NEW BRITISH SMALL FAMILY CAR

ONE of the interesting exhibits at the Olympia show in London was the new Hillman Minx, a small car designed for family service, with low first cost and low maintenance as features. The wheelbase of this little job is 92 inches, but the body engineering has been carried out to give ample room, indeed a surprising amount for so small a job. The price begins at approximately $600.

The power plant is a four-cylinder monobloc engine of 9.8 h. p., R.A.C. rating, with side-by-side valves and detachable head, thermo syphon and fan cooling and pressure lubrication. It has a three-bearing crankshaft.

The clutch and gearbox are in unit with the engine, the former being of the dry plate type, while the gearbox provides three speeds, and has central change. Transmission is by Hardy-Spicer propeller shaft to the spiral bevel, semi-floating back axle. The four-wheel brakes are of Bendix-Perrot self-energizing duo-servo pattern, operated through cables housed in flexible armored casings. The steering is of Marles type, and is exceedingly light and positive in action.

The gas tank is at the rear of the car, and contains six and one-half gallons. The carburetor is fed from it by a pump, and a fuel gauge is fitted on the instrument board. Ignition is by coil, the six-volt electrical equipment being of Lucas manufacture.